OCTOBER 10, 1960

PURCHASING

The Methods and News Magazine for Industrial Buyers

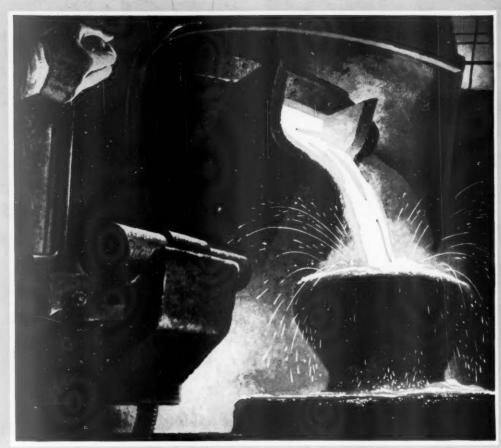
What's happening in VALUE ANALYSIS p. 89

Purchasing prepares for MATERIALS MANAGEMENT

p. 70



The new trend
to
AUTOMATED PURCHASING
p. 80



Melting furnace at Calumet & Hecla, Inc.—Wolverine Division, where Shell trus Fluid 902 eliminates the danger of hydraulic line fires.

Ready...aim... NO FIRE!

Take 10 high-temperature alloy-melting furnaces, hydraulically operated—each pouring 1500 lbs. of molten metal every hour in close proximity to "live" hydraulic lines—and you can readily see why selection of hydraulic fluids is important to Calumet & Hecla's Wolverine Tube Division.

Now the operation is made more reliable by the use of Shell Irus Fluid 902, a water-in-oil emulsion type fluid. Irus® Fluid was C & H's choice, after carefully

studying other commercial hydraulic fluids—for many reasons:

- 1. Irus Fluid will not support combustion.
- 2. Irus Fluid has excellent lubricating properties.
- Irus Fluid has hydraulic efficiency and equipment compatibility.
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- Irus Fluid's bright yellow color makes it easy to spot and trace leaks.

In plant after plant, operators find that these advantages assure maximum safety to both personnel and equipment.

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AN INTERESTING FACTI
Every Shell Branded Industrial Lubricant is named for a sea shell. Shown here is the Irus ellipticus.

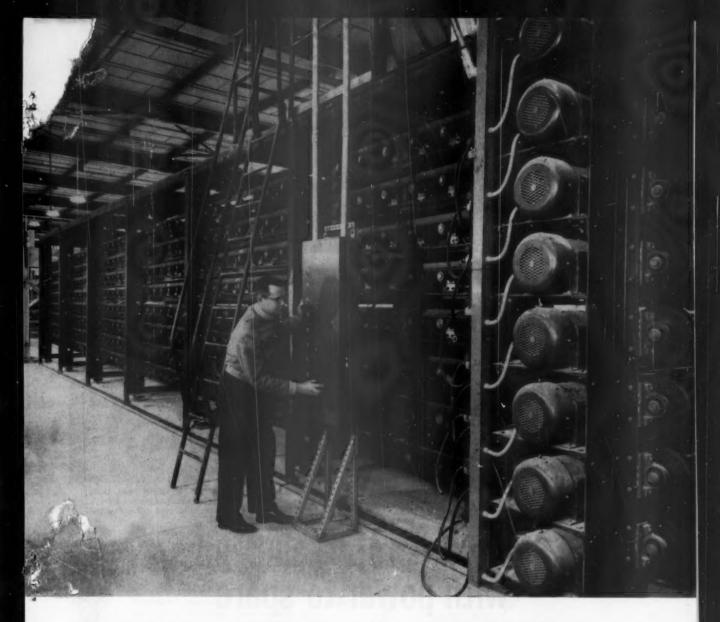
SHELL IRUS FLUID 902

the low-cost, fire-resistant hydraulic fluid



For More Information Write No. 151 on Place Mark Card-Page 32

For More Information about ad on facing page Write No. 159 on Place Mark Card—pg. 32→



Century motors provide continuous operation for oven conveyor

Eight Century 2-horsepower, squirrel-cage, totallyenclosed-fan-cooled motors accelerate materials onto an 8-deck feed-in conveyor at precise feed-in speeds.

At the end of this conveyor system is an oven. Materials must enter this oven at continuous speeds, and materials must be delivered to the oven constantly during each plant shift. A comparable 8-deck conveyor system is at the other end of the oven to remove the baked materials for cooling and stacking.

These eight Century motors assure the continuous flow operation pictured here. Top-quality Century motors provide the dependability required for long hours of stop-start operation.

Your Century sales and application engineer, a fulltime motor specialist, can help you choose the right motor for your needs from Century's full line of from 1/20 to 400-horsepower motors. Just contact him or your authorized Century motor distributor.

CENTURY ELECTRIC COMPANY

St. Louis 3, Missouri Offices and Stock Points in Principal Cities

Century 60-12



LIGHT DUTY GRINDING: A SKIL Raised Hub Wheel Kit and safety guard are all you need to quickly convert the 7" or 9" Disc Sander into a versatile grinder.



HEAVY DUTY GRINDING: Convenient spindle lock lets you quickly mount any of 37 SKIL silicon carbide or aluminum oxide abrasive wheels to handle rugged, heavy duty grinding jobs.



SANDING AND FINISH BLENDING: Smooth, steady, vibration free power lets you do faster, better sanding and finish blending in less time.



CLEAN-UP JOBS: Clean castings, structural steel, tanks, vats, sheet metals, concrete...remove rust, scale and paint... do dozens of production and maintenance jobs with wire wheelequipped SKIL Models 852 or 853.

Skil grinders do all 4 jobs with power to spare

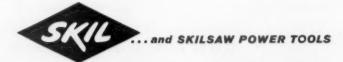
Compare Skil Models 852-53 with other leading grinders

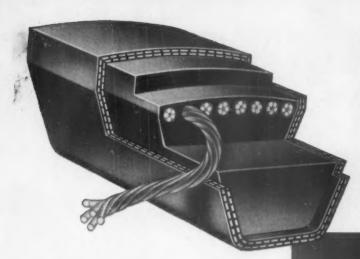
Check the chart at right. It's proof that powerhouse Skil sander-grinders give you more work-saving power than the other four leading makes.

And "most powerful" is just one of the advantages. Your Skil distributor can show you that Skil sandergrinders have what it takes in the easy handling and maintenance-free departments, too. He's listed under "Tools, Electric" in the Yellow Pages.

Or for full information write to Skil Corporation, 5033 Elston Avenue, Chicago 30, Illinois, Dept. 125 J, in Canada: 3601 Dundas Street West, Toronto 9, Ontario.

9" Models	SKIL #852	Brand A	Brand B	Brand C	Brand D
Amp. Rating	12	10	8	11.5	10
Max. H.P.	2.48	2.2	1.3	1.70	1.92
Net Wt.	123/4	12¾	14	12¾	15¾
7" Models	SKIL #053	Brand A	Brand B	Brand C	Brand C
Amp. Rating	12	10	8	8.5	9
Max. H.P.	2.48	2.2	1.4	1.69	1.03
Net Wt.	123/4	123/4	14	123/4	133/4





Need High Capacity In Compact Space?

DA 358 V-BELTS. This major design improvement in V-Belts brings you unprecedented compactness, high capacity and drive economy.

Chain and Gear Benefits with No Metal-to-Metal Contact?

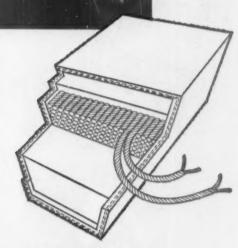
DA POSITIVE DRIVE BELTS. Revolutionary tooth-grip principle; no stretch; no constant lubrication. Highly versatile.

Whatever your V-Belt needs, DURKEE-ATWOOD meets them

What do you want in a V-Belt? You want consistent performance, long trouble-free life and full-rated power transmission. That means the belts must be made of the finest quality materials, with careful attention to engineering details, manufacturing processes and testing procedures. Durkee-Atwood V-Belts are made of the newest high tenacity synthetic fibres to assure length stability in storage. The exclusive Durkee-Atwood "Iso-Dynamic" Vertical Matching Machine eliminates the "sag error" that develops when V-Belts are matched on horizontal equipment. This assures equal power transmission from all belts on multiple drives . . . Look to Durkee-Atwood for quality, service and savings ... the most complete line of industrial V-Belts.



On Your V-Belts



40% Extra Capacity in Regular V-Belts?

RED SHIELD MULTIPLE V-BELTS. Increased capacity at no increased cost. Available in oil and heat resistant and static dissipating constructions.



Top Performance in Variable Speed Drives?

VARIABLE SPEED BELTS. For constant performance. Abrasion-resistant cover; crowned cross section maintains stability under extreme loads.

DURKEE-ATWOOD V-BELTS

DURKEE-ATWOOD COMPANY

MINNEAPOLIS 13, MINNESOTA

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Include the Graybar man in your electrical planning.

The recommendation he makes comes from experience with countless kinds of power distribution equipment, motors, controls, wiring and lighting supplies.

Call Graybar for impartial recommendations . . . and able, in-the-plant help.
We'll work with you or your electrical contractor.

95

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ELECTRIC COMPANY, INC.

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PURCHASING

The Methods and News Magazine For Industrial Buyers

OCTOBER 10, 1960 **VOLUME '49, No. 8**

B. P. MAST Chairman of the Board B. P. MAST, JR. President

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Pulse of Business	7
The P.A.'s Outlook	13
Price Trends	15
Sales, Inventories, New Orders	19
Washington Report	21
Purchasing Pointers	67
Editorial: Time for Depreciation Reform	69
Materials Management Gives the Answers	70
A Shortcut to MRO F'eld Control	74
Top Flight Purchasing Earns Recognition at the Top John Van de Water	76
How to Sell Supplier Salesmen	79
Purchase Orders Typed Automatically	80
Purchase Orders Typed Automatically	80
When the P.A. Goes AbroadRene Dentan	€5
When the P.A. Goes Abroad	85 89
When the P.A. Goes Abroad	89 90
When the P.A. Goes Abroad	89 90 95
When the P.A. Goes Abroad	89 90 95 96
When the P.A. Goes Abroad Rene Dentan What's Happening in Value Analysis Price Analysis: First Step to Value Dean Ammer Value Consulting Pays Off Richard A. Quinn Value Analysis: The Grouping Approach Paul Mitchell Value Analysis: The Newest Supplier Service Forms Forum	85 89 90 95 96 99
When the P.A. Goes Abroad	85 89 90 95 96 99 100 102
When the P.A. Goes Abroad Rene Dentan What's Happening in Value Analysis Price Analysis: First Step to Value Dean Ammer Value Consulting Pays Off Richard A. Quinn Value Analysis: The Grouping Approach Paul Mitchell Value Analysis: The Newest Supplier Service Forms Forum Who Pays When the Vendor Doesn't Deliver? Marshall Coke	85 89 90 95 96 99 100 102

REGULAR FEATURES

Purchasing Follow-up 27	Office Equipment and Supplies 204
Information for Your Catalog Files 44	Association News 214
Letters to the Editor 50	Book Reviews 248
Purchasing People 55	News 264
F.O.B 60	Industry 280
In Purchasing 65	Employment Service
Products and Ideas 106	Index to Advertisers 312

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For More Information about ad on facing page -Write No. 162 on Place Mark Card—pg. 32

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EDITORIAL AND EXECUTIVE OFFICES
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THE
STOVER
LOCK NUT
FAMILY
CLAMPS DOWN
ON COSTS
AT
EVERY
TURN

Stover Automation Lock Nut, Grade B, for use with low carbon and medium carbon heat treated boits and stude (SAE 2, 3, 5). Stocked in bulk containers and standard packages by authorized industrial distributors.

Don't let the simple appearance fool you:

Stover Lock Nuts take 25% less tightening torque to reach required clamping loads than common nuts or competitive lock nuts. This means you can use smaller, lighter driving tools. Yet Stover Lock Nuts won't back off by themselves—seated or unseated. Moreover, they start like common nuts, run up smoothly without galling or seizing, can be hand or hopper fed, and are fully reusable.

Car and tractor makers, for example, used about 80 million Stover Lock Nuts last year. The money these companies saved in *either* purchasing, assembly, or service-in-the-warranty-period easily paid for the lock nuts' initial cost. Value - in spades!

Stover Lock Nuts cost a little more than common nuts, but are very competitive with other lock nuts. They're available in bulk, with the popular styles also available through industrial distributors. Write us for the name of your nearest distributor, samples, or the just-published Stover Engineering Manual.

LAMSON & SESSIONS

BOOD TIEDEMAN ROAD - CLEVELAND 9, OHIO
Plants in Cleveland and Kent. Ohio - Chicago and Birmingham



FIVE STANDARD STYLES



Automation
1/4"-1"
A basic nut for general use.



Flange #8 - ½" or clamping soft and/or thin materials.



Thin Hex Collar
1/4"— 11/2"
Used where space is a problem, such as on pinion and
pulley shafts.



Hex Coltar
7/6" - 2"

Lower on-torque in the larger sizes than Automation style.



Heavy Hex Collar

7/a" — 2"
Used where greater bearing surface is needed than available with Hex Collar style.

Pulse of Business

1961 Outlook: As Good As 1960

Steel Will Operate At 74% of Capacity It's Forecasting time again as 1961 looms closer. Among the better prognosticators is the National Industrial Conference Board—which each year holds a meeting where industrialists present the outlook for their industries. This year's session in New York drew thousands of businessmen who came to hear "the word."

The panelists offered this overall outlook for 1961: as good or a little better than 1960. Among the individual industry forecasts were these:

Steel—Ingot production in 1961 "will be about 105 million to 110 million tons," said Howard V. Clark, executive vice-president of Detroit Steel Corporation. He also noted that this year's production would be about 105 to 110 million tons. The difference: 1960 will be closer to the 105 million figure while 1961 will be closer to the 110 million mark.

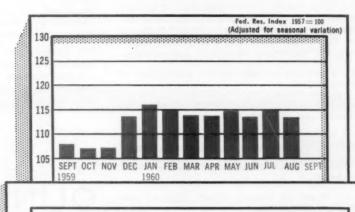
Annual capacity next year will be 148.6 million ingot tons. Thus Clark's estimate would put steel production at an average of 70% to 74% of capacity in 1961.

He also estimated next year's steel exports at $3\frac{1}{4}$ million tons or slightly less—roughly the same as in 1960. Imports, he said, would decline a million or a million and a half tons in 1961 to $2\frac{1}{2}$ million tons.

Nonferrous Metals—The 1961 outlook for four nonferrous metals—copper, lead, zinc, and aluminum—was presented by Dr. Joseph Zimmerman, editor-in-chief of the Daily Metal Reporter.

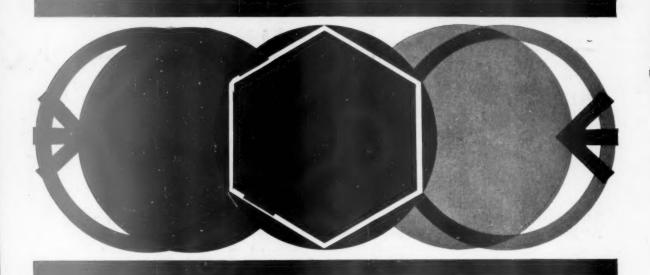
Next year excess copper production "may be even larger" than in 1960, he said, "because many new properties will be coming into production and existing mines are scheduled to step up their output." Therefore, "copper is likely to be running out of our ears in 1961." Because of this imbalance, "the world price of copper in 1961 is likely to be lower than the price that now prevails, and this in turn will affect the domestic price of the metal." (Turn Page)

The FRB's Industrial Production Index slipped a point in August to 109 (1957=100). Durable manufacturing dropped two points to 104, while non-durables fell a point to 115.



INDUSTRIAL PRODUCTION

For More Information about ad on facing page ←Write No. 163 on Place Mark Card—Page 32 OCTOBER 10, 1960



OLIN ALUMINUM COLD PROCESSED ROD & BAR

GIVES YOU BETTER MACHINABILITY AND IMPROVES YOUR END PRODUCT

The secret's in the finer, more uniform

grain structure. Your machines will "eat it up." Smoother machining. Vastly improved chip breakage. Superior finishes. Reduced chatter. Longer tool life. All these are the advantages offered-at no extra cost-with Olin Aluminum cold processed rod and bar. This unique cold-forming process takes advantage of aluminum's metallurgical characteristics at every step.

Here are the reasons why our cold processed material results in a better end product:

Reason 1. Smaller-sized production blooms are used for greater soundness and uniformity of structure.

Reason 2. A 30-hour homogenizing treatment gives the blooms a more evenly distributed, more uniform composition.

Reason 3. Blooms are scalped to remove all surface irregularities and defects.

Reason 4. All blooms are cleaned, etched, inspected and coated with a special lubricant.

Reason 5. Final product is cold-formed in a single, rapid stroke. This avoids deposits of heavy oxides on the surface, prevents cracking even complex alloys, eliminates rolled-in seams and laps, results in very fine uniform grained microstructure, gives remarkable working uniformity along length and surface-to-center.

Why not find out for yourself? Ask your local Olin Aluminum sales office or distributor for the names of firms in your area who have discovered cold processed rod and bar. Hear what they have to say. Write for our brochure on Cold Processed Rod and Bar.



Pulse of Business

The price of lead in 1961, he observed, will be "somewhat higher than at the present time." He noted also that there is some uncertainty as to whether the 13¢ level for zinc can hold in 1961. The only way that it could, he said, is if there is a marked increase in consumption.

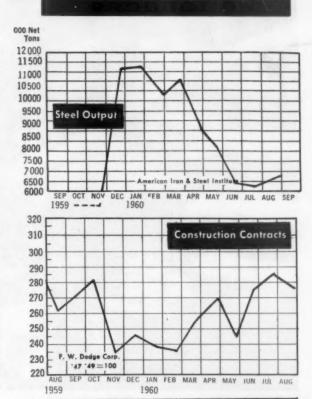
The aluminum industry, he noted, "is hesitant about increasing its prices in 1961." So far as consumption is concerned he expects it to rise in '61.

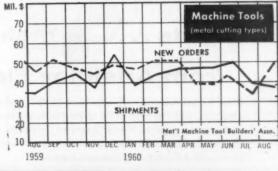
Machinery and Equipment will run at about the same level as 1960, according to C. W. Schweers, vice president-industries group of Allis Chalmers Manufacturing Company. It will be a stable year, he said, with "no spectacular new record set."

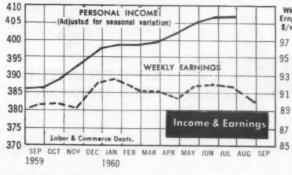
Automobiles—1961 should equal or "possibly better" the 1960 level of 6.5 million cars (including imports), said Byron J. Nichols, group vice-president—auto sales of Chrysler Corporation. U.S.-built economy cars—which now account for about 30% of all sales—"will easily account for at least 35% or possibly a little more" in '61, he said.

This year's level of auto sales will be second only to 1955. The rapid growth of suburbia and multi-car families, he said, could make 1961 the year for the beginning of another sharp sales increase for the industry.

Construction—Construction next year will be "equally as good" as 1960's record of over \$50 billion, with the possibility "of an increase of 2% to 3%." So says Raymond C. Daly, president of George A. Fuller Company. (Turn Page)







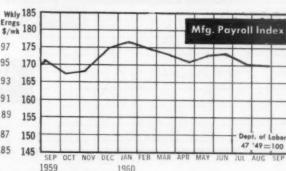




Photo courtesy Elastic Stop Nut Corporation of America

Nuts . . . ESNA

makes millions of them

from Aristoloy Electric Furnace Steel

Steel for self-locking hex nuts must be uniform in structure, easy to machine and free from internal and external defects. Elastic Stop Nut Corporation of America insists on these qualities... and gets them with Aristoloy cold finished bars.

Aristoloy Electric Furnace Steels, carefully controlled from melt shop to finishing operations, meet specifications for this and other

applications requiring steel of uniform quality.

For complete information about Aristolov blooms.

slabs, billets and bars, in carbon, alloy, stainless and leaded, call the Copperweld representative in your nearest large city . . . or write for NEW PRODUCTS & FACILITIES CATALOG.

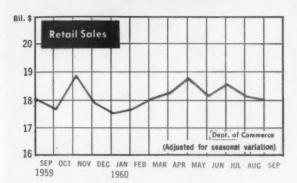


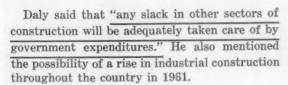


ON OF

COPPERWELD
STEEL COMPANY

ARISTOLOY STEEL DIVISION - 4028 Mahoning Ave., Warren, Ohlo - EXPORT: Copperweld Steel International Co., 225 Broadway, New York 7, N. Y.





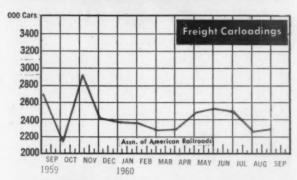
Petroleum—Demand for all petroleum products will exceed 10 million barrels a day for the first time in 1961, said Vernon A. Bellman, vice-president—marketing of Mobil Oil Company. This would mark an overall 3% increase over 1960.

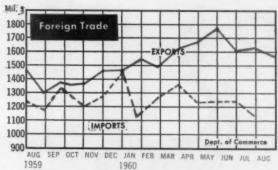
The industry's principal product, automotive gasoline, is also expected to show a 3% increase in volume next year. And residual fuel oil, used in large amounts by steel companies and utilities, will show a rise of 1.3%.

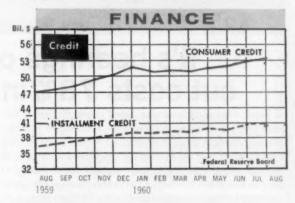
Chemicals—"A 3% to 5% increase in sales" next year over 1960's \$25 billion was predicted by I. H. Munro, vice-president—marketing of Allied Chemical Corporation. This compares with the average increase of 7% in this industry during the past 25 years.

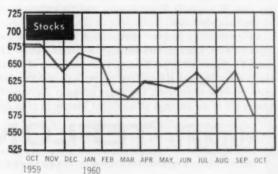
Shrinking profit margins will be a big problem for the chemical industry in 1961, he said. Reason: higher costs, stiffer domestic competition, excess capacity, and foreign competition.

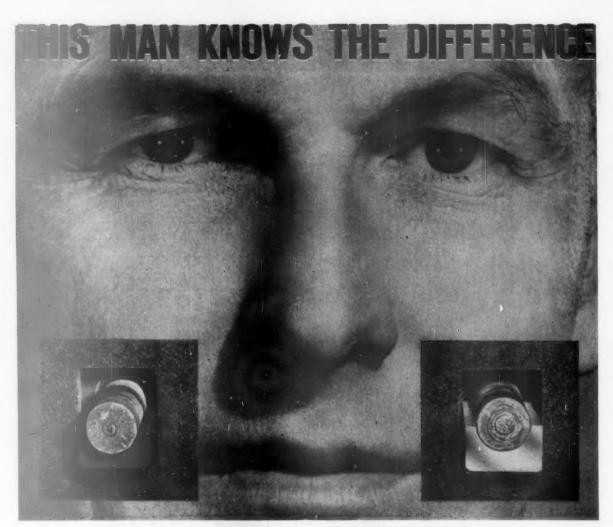
Retail Trade—Consumer disposable income will rise \$11 billion in 1961 to \$365 billion. Therefore, sales of the four major retailing groups—which represent 25% of total retail volume—will increase 3.5% to \$59 billion next year, says W. E. McCormick, vice-president of Allied Stores Corporation.











It's bearings of TEFLON® that cut costs 78% in kiln-oven service

A paper company's insulation board passes through a kiln oven (370°F.) on rollers supported by 2,000 saddle bearings. Material formerly used: graphite insert bronze bearings. First cost: \$2.10 per bearing. Average life: 1½ years. Failure of these bearings, due to wear of graphite, frequently caused damage to the steel stub shafts, which then had to be replaced or refinished. Additional repair cost: estimated at about \$0.75 per shaft. Cost per year: well over \$1.50 per bearing, plus the additional cost of labor and downtime.

After a thorough program of evaluation, the paper company replaced worn bearings with bearings of a filled Teflon TFE resin. First cost: \$3.25 per bearing. After two years of service, the new bearings are still performing perfectly and the shafts show no wear whatsoever. The paper company estimates the service life of the bearings of reinforced Teflon to be at least

10 years. Cost per year: less than \$0.33 per bearing . . . a cost reduction of 78%.

TEFLON TFE resins offer an exceptionally low coefficient of friction, virtually complete chemical inertness, continuous high-temperature performance up to 500°F. Bearings of TEFLON can be tailored for increased loads and velocities or high wear resistance by the use of filled compositions and reinforced constructions. And they make possible performance advantages and cost savings like those cited above.

Do you purchase bearings in your operation?

Write for further information to: E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department T-5010, Room 2526, Nemours Building, Wilmington 98, Delaware.

In Canada: Du Pont of Canada Limited, P.O. Box 660, Montreal Quebec.



TEFLON FLUOROGARBON RESINS

ETTER THINGS FOR BETTER LIVING ... THROUGH CHEMISTRY

TEFLON is Du Pont's registered trademark for its family of fluorocarbon resins, including TFE (tetrafluoroethylene) resins and FEP (fluorinated ethylene propylene) resin.

The P.A.'s Outlook

- Buyers Pessimistic About Economy
- Confidence Index Drops 17 Points
- Chicago Association Notes 'Soft Condition'

PURCHASING agents surveyed in this month's Purchasing Opinion Poll were less optimistic about the short-range business outlook than they have been in many months.

Fourteen percent of the P.A.'s say that economic conditions in their industries will be slightly worse in the next three months. Another 1% note that conditions will be much worse.

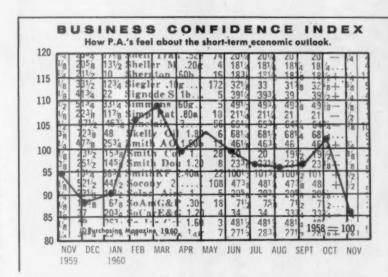
This total of 15% is more than double the number of buyer's who believed conditions would get worse in last month's survey. In the September poll, only 6% of the P.A.'s thought business would decline.

Almost 30% of the purchasing agents polled this month think business conditions will be the same in October, November, and December. The remaining 56%—12% less than last month—predict better business.

As a result, the Purchasing Magazine Business Confidence Index fell 17 points to 86 (1958 =100), the lowest figure in over a year.

See No Firming

The business survey committee of the Chicago Purchasing Agents Association observes that there is "a soft condition with no firming apparent in the Chicago area . . . The dullness reported last month still prevails, with some further declines indicated in inventory levels, employment,



Purchasing Magazine's Business Confidence Index plummeted 17 points in October to 86 (1958=100). The fall in the indicator—based on a survey of 1000 purchasing agents from coast to coast—shows that P.A.'s are pessimistic about the business outlook in their industries for the next three months.

production volume, and profits."

Says the committee: "Some price increases have been noted, but (we find) no reason for believing that any such upward adjustment can be supported by current conditions." In addition, it notes that "lower prices are also being reported by slightly more than in any previous period this year."

It also says that "purchasing agents still find it possible to defer their purchases of principal commodities to a hand-to-mouth basis."

Forty-seven percent of the purchasing executives surveyed by the Pittsburgh Purchasing Agents Association report their inventories are the same as the previous month. Almost 40% say that their stocks are smaller, while the remaining note that they have larger inventories.

In the area of backlogs, the

figures are virtually identical. Forty-four percent of the P.A.'s say backlogs are the same, 37% say that they are smaller, and 19% say that they are larger.

Profits Are Steady

More than half of the buyers say that their companies' profits are steady. But 35% report worse profits; 10% say that profits are better.

The Canadian Association says that new orders showed "some added strength." But it notes that "production has not reflected the reported increase in new orders."

Among the commodities for which higher prices are being paid, it lists lubricating oils and tires. Polyethylene prices, it says, are lower.

The association says that three commodities are in short supply in the Dominion: benzol, phthalic anhydride, and maleic anhydride.

MORSE AGAIN BRINGS YOU THE BIGGEST NEWS IN CUTTING TOOL HISTORY



First Patent of Its Kind Ever Issued For Tap-Manufacture

"Vectormatic" grinding - the revolutionary new principle of tap manufacturing is now an exclusive Morse patented process.

"Vectormatic" automatically and accurately controls grinding wheel feed limit and compensates for changes in the position of the cutting face of the wheel due to wheel dressing.

"Vectormatic" taps are absolutely uniform, with keen cutting edges that insure longer service life than any other tap on the market. For fast, economical, exact tolerance tapping, order "Vectormatic." Call your Morse Franchised Distributor today ... your only source for patented Morse "Vectormatic" taps.

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A Division of VAN NORMAN INDUSTRIES, INC.

Price Trends

- Demand for Nonferrous Metals Is Slight
- Copper Price Steady Despite Few Orders

THE NONFERROUS metal markets have been generally slow in recent weeks. Buying in most areas has been taking place at relatively low levels.

This is the current picture in some of the important commodities that P.A.'s buy:

Copper: Despite the fact that copper buying has slowed, the price has remained steady at 33 cents a pound. Suppliers expected a rash of orders after Labor Day, but have been disappointed thus far.

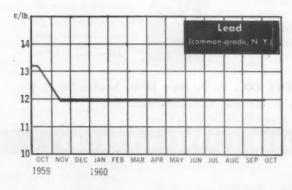
In contrast, the August report of the Copper Institute showed that worldwide refined stocks increased 11,999 tons to 383,305 tons, despite the fact that deliveries to fabricators advanced 51,-146 tons to 319,337 tons.

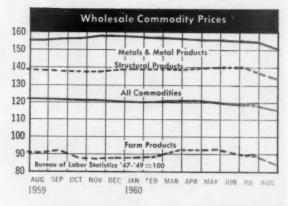
New orders booked by wire mills, brass mills, and foundries rose in August. Their new business called for the use of 103,750 tons of copper—a gain of 38,889 tons from the previous month.

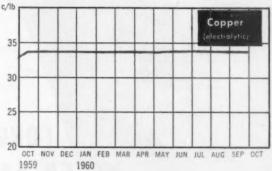
Lead: Lead buying has been slow recently, both in the United States and in London. While some P.A.'s are filling their immediate needs, most have adequate inventories to carry them through.

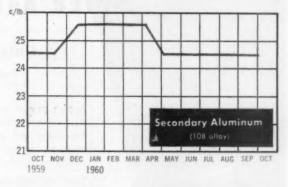
Participants at the recent meeting of the International Lead-Zinc Study Group in Geneva predicted that lead output next year would total 2,284,000 tons. This would mark a 79,000-ton increase over 1960.

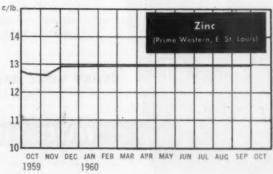
Zinc: Purchasing agents for die casters have been placing a considerable number of orders for special high grade for delivery this month. Other-













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Service proved Vogt GP Forged steel valves are the choice of leading meter and gauge Manufacturers for top performance and unfailing reliability.

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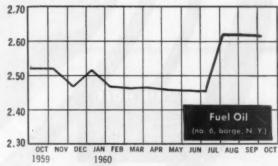
TINGS, FLANGES and UNIONS

\$/bb1.

W/

Price Trends





wise, the demand for zinc has been slight.

According to the latest monthly report of the American Zinc Institute, however, shipments increased almost 25% and production fell around 14%. This combination resulted in the first decline in smelters' inventories since last March.

Shipments rose 12,018 tons to 62,020 tons, while output fell 10,118 tons to 63,636 tons. Unsold stocks in smelters' plants fell 4,350 tons to 202,707 tons.

Tin: The International Tin Council's action in releasing tin from export controls on October 1 is expected to have little effect on prices. Nevertheless, there will be no restrictions on the free world's tin producing nations for the first time since December 15, 1957.

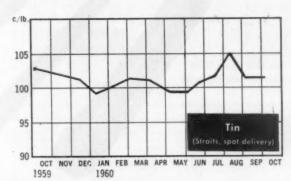
Demand from the United States for tin has been light. However, improvement in demand from Europe has helped to keep prices at their current levels.

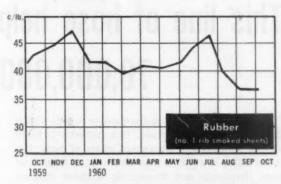
Aluminum: Primary aluminum production in September fell substantially from the previous month. The six domestic producers are exercising a tighter control over output than they have in the last year and a half.

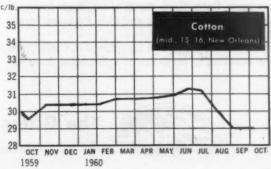
Reason for the decline: demand hasn't kept pace with previous production rates. Stocks of aluminum left over from last year allowed buyers to hold purchases under actual levels of consumption.

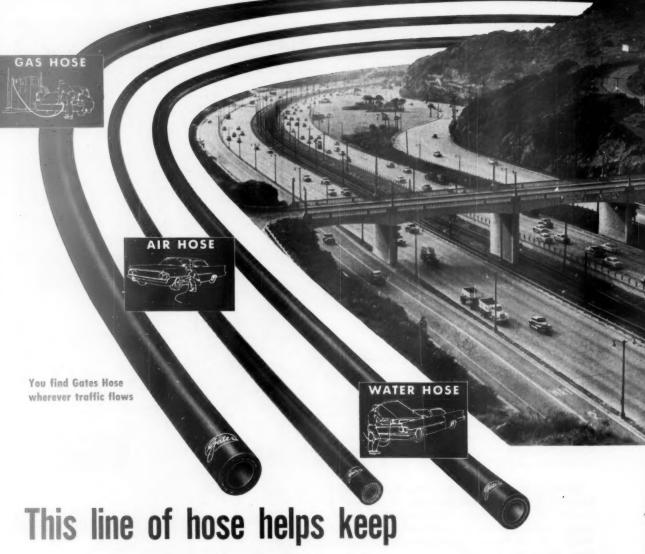
Wholesale Prices: The Wholesale Price Index in August remained steady at 119.2 (1947-49=100). Prices of most component commodity groups showed little change.

Iron, steel, and nonferrous scrap prices increased during the month. Machinery and motive product prices were unchanged.









70,000,000 vehicles on the move

To service some 70 million motor vehicles with gas, air, water and grease, this nation's 183,000 service stations use uncounted miles of hose. Because Gates is a major manufacturer of industrial hose, thousands and thousands of these stations rely upon Gates Curb Pump Hose, High Pressure Grease Hose, Air, Water and Low Pressure Steam

In back of this broad acceptance of Gates Hose is a continuing program of specialized hose research at the multi-million dollar Gates Research Center. The aim of this specialized research is to increase hose utility, lengthen hose life and lower industry's annual hose costs.

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TPA502



The Gates Rubber Company

The Mark of <u>Specialized</u> Research

Gates Industrial Hose Made in a Full Range of Types and Sizes

Sales, Inventories, Orders

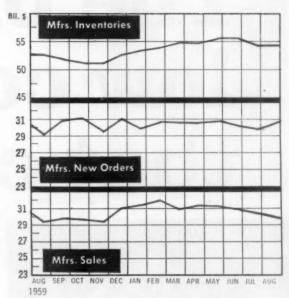
New Orders Advance After Two-Month Drop

Manufacturers' new orders ended a two-month decline in August, reports the Department of Commerce. Sales were lower, while inventories remained unchanged.

Seasonally-adjusted new orders were up \$600 million—or 2%—to \$29.8 billion. Most of the increase was due to new contracts signed by electronics and aircraft manufacturers.

Sales were off \$300 million (1%) to \$30.1 billion. The largest drop was in shipments of primary metals.

Inventories were steady at \$54.9 billion. There was some liquidation by primary metals and chemical companies, but this was offset by the buildup in the motor vehicle producers.



Dept. of Commerce-Seasonally adjusted

Manufacturers' Sales	1959			1960		
Seasonally Adjusted (Millions of Dollars)	July	Apr.	May	June	July	Aug. (p)
All Manufacturing Industries	30,858	31,029	30,987	30,780	30,560	30,100
Durable-goods industries	15,384	15,005	15,063	14,880	14,810	14,400
Primary metal	2,104	2,306	2,244	2,010	2,120	
Fabricated metal	1,787	1,692	1,753	1,760	1,760	
Machinery	4,778	4,832	4,775	4,740	4,730	
Transportation equipment	3,667	3,361	3,487	3,600	3,460	
Lumber and furniture	1,077	989	937	910	880	
Stone, clay, and glass	805	748	749	760	750	
Nondurable-goods industries	15,474	16,024	15,924	15,890	15,750	15,700
Food and beverage	4,540	4,721	4,627	4,630	4,630	
Tobacco	382	388	398	400	380	
Textile	1,256	1,259	1,286	1,270	1,280	
Paper	1.060	1,030	1,044	1,050	1,030	
Chemical	2,171	2,383	2,352	2,350	2,310	
Petroleum and coal	3,093	3,264	3,180	3,180	3,190	
Rubber	519	533	550	520	480	
Manufacturers' Inventories Seasonally Adjusted (Millions of Dollars)						
All manufacturing industries	52,241	54,657	54,951	55,050	54,880	54,900
Durable-goods industries	30,349	31,925	32,071	32,180	32,020	32,000
	4,108	4,628	4,696	4,800	4,750	
Fabricated metal	3,411	3,316	3,354	3,340	3,320	
Machinery	9,802	10,528	10,599	10,640	10,560	
Transportation equipment	7,397	7,583	7,522	7,460	7,410	
Lumber and furniture	1,823	1,848	1,848	1,860	1,870	
Stone, clay, and glass	1,270	1,421	1,434	1,440	1,440	
Non-durable goods industries	21,892	22,732	22,880	22,870	22,850	22,900
Food and beverage	4,847	4,854	4,999	4,990	4,940	
Tobacco	1,838	1,952	1,955	1,950	1,940	
Textile	2,534	2,719	2,708	2,700	2,670	
Paper	1,457	1,551	1,584	1,590	1,610	
Chemical	3,847	4,075	4,085	4,110	4,140	
Petroleum and coal	3,314	3,351	3,336	3,300	3,290	
Rubber	1,075	1,191	1,184	1,200	1,230	
Manufacturers' New Orders Seasonally Adjusted (Millions of Dollars)						
All manufacturing industries	30,827	30,353	30,470	30,110	29,360	29,800
Dwable-goods industries	15,493	14,469	14,680	14,340	14,060	14,300
Nondurable-goods Industries	15,334	15,884	15,790	15,770	15,300	15,500
	13,334	12,004	12,170	13,110	10,000	, , , , , , ,

For More Information about ad on facing page -Write No. 169 on Place Mark Card—page 32 October 10, 1960 (r) Revised, (p) Preliminary.

The only low cost that counts



Washed coal stores better, handles better, and results in lower equipment maintenance costs.

...when you buy coal...is low cost per 1000 pounds of steam. And that's why so many purchasing and plant men agree on Island Creek Precisioneered Coal.

You're not about to lose all interest in the invoice price of coal. But the closer you get to the coal picture in your plant, the more you realize that the important cost is the net cost per 1000 pounds of steam, and not the cost per million BTU. And it's when these final net costs are figured that the wisdom of choosing Island Creek Precisioneered Coals shows up. For

these coals are from inherently superior seams, mined and prepared by the most modern methods to perform most efficiently in the specific burning equipment in which they will be used. Our engineers would like to lay some case histories before you and your plant people . . . and let you take it from there. Write or phone. No obligation.



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You can depend on Island Creek . . . a career company dedicated to coal

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Washington Report

Economists See Signs

Of Possible Recession

W HILE there are no immediate indications of a recession, government economists see some of the same storm signals in the economy today that preceded the 1957-1958 downturn. These include:

(1) Profits are sharply down.

(2) Steel production is at a low level.

(3) Plant and equipment spending has lost its push in the last half of this year.

(4) Electrical appliance and furniture sales have been disappointing.

In the first half of 1957, these same symptoms developed. Profits declined, prices tended to drop, and inventory accumulation was ended.

In previous years when similar trends were underway, they led to a period of adjustment. Therefore high-level government economists freely indicate that they

Secretary of Labor James P. Mitchell feels that the high number of employed is just as important a statistic as the number of unemployed.

believe a recession in now in the making.

The crucial factor will be the decisions by industry on plant and equipment spending during the next six months. If there isn't a definite upswing, then many experts here think that the economy will move downward.

For the next few weeks, the executive policy-makers in the government will be tilting in the political arena. The rise in manufacturing during the fall will tend to mask any deeper economic problems that may be developing. Then the public may be too preoccupied with holiday buying to become deeply concerned with a business downtown. Therefore, there won't be any pressures for legislative remedy until the new session of Congress is underway in 1961.

Top White House economic adviser Dr. Raymond J. Saulnier, chairman of the Council of Economic Advisers, has tended to view the predictions of a downturn as alarmist.

He contends that the level of the economy has been very high. He notes that employment has been steady at record highs, prices have also been steady, and auto sales are higher than a year ago. The late summer and fall lull, he believes, will give way to a new vigor in the economy—which will push off to higher levels next year.

On the other hand, members of Saulnier's staff take the opposite point of view. They feel that this is the lull just before a gathering economic storm. By the first quarter of next year, they say, the downturn will be clearly apparent.



Raymond J. Saulnier is one of the few government economists who believes that business conditions will continue at a high level in 1961.

These staff members have an answer to the optimistic statistics cited by Dr. Saulnier. For example, to the comforting circumstances of a high level of employment, they counter with the high level in the number of jobless. On the issue of prices being steady, they point out that these price levels have not attracted an increase in the volume of buying.

A Pessimistic Evaluation

Department of Commerce economists are prepared to brief the nation's top business leaders on the outlook as they see it during the Business Advisory Council meeting at Hot Springs, Va., later this month.

It will be significant to see the reaction of industry spokesmen to what will certainly be a rather pessimistic evaluation of prospects for the economy.

There are several political undercurrents that tend to suppress public statements by government technicians during the political campaign. A bouncing healthy economy is supposed to favor the Republicans, while forecasters who see difficulties looming ahead have been accused of purveying "gloom and doom."

As a result, top officials of the Administration—the political appointees—have filtered out any opinion that smacked of recession.

The Business Advisory Council



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STAINLESS STEELS . TOOL STEELS . HIGH TEMPERATURE METALS

Washington Report

meetings, however, are supposed to be "hair down" sessions where government economists "level" with the elite of industry, without thought of politics or spoon-feeding bitter intelligence.

A vital factor in the course of the economy will be purchasing agents' policies toward inventory accumulation.

During the first quarter of this year, there developed the highest rate of inventory accumulation in history—excepting war-time scarcity. In this period, inventory was being built up at the rate of \$11 billion a year.

Inventory Rise Ends

This represented a rate of more than 2% of the gross national product. Much of the inventory buying stemmed from the threemonth steel strike that had drained steel inventories below normal levels.

However, the rapid rate of buildup came as a general surprise. During the second quarter the rate of inventory accumulation slowed. By mid-year, the trend toward accumulation petered out completely.

Currently the inventory-to-sales ratios are considered normal. If sales continue at the present level or rise, there is little likelihood that liquidation of inventory will develop.

But if the volume of sales drops off—especially in the area of plant and equipment—current levels of inventory would appear to be excessive and some liquidation could be expected.

Buyers generally are described by government analysts as being cautious. They know there is plenty of capacity and that they can get deliveries quickly. This gives them time to see how the economy will shape up.

While the Federal Reserve Board has acted to make money cheaper and credit more available, money is still too costly to tie up in inventory.

The trend has therefore been for the industrial consumer to let his suppliers hold the inventory. This is likely to continue unless a sudden turn of events injects the possibility of short supply.

While they admit the possibility of error, some of the leading economists in key government positions believe that the new Administration—either Republican or Democratic—will have to make a series of remedial actions to combat a downturn.

They feel that much valuable time will have been lost in the preoccupation with the political campaign. Thus what might have been stemmed with lesser palliatives at an earlier date will call for more heroic measures by next year.

Significantly, these forecasts do not reflect a current breakdown in the economy. Secretary of Labor James P. Mitchell has announced that 68,300,000 Americans are at work, with 94 out of every 100 workers holding jobs.

The Labor Secretary pointed out that a substantial proportion of the unemployed are out of jobs for very short periods of time. The rate of unemployment among the major family breadwinners is about 3%—well below the national average.

What tends to dampen any optimism for a new upward surge is that no new forces are coming into the market which will lead the economy onto higher ground.

1960 Construction Drops

The volume of construction this year will probably be about \$900 million under the dollar value of construction put in place in 1959. When the higher costs this year are taken into consideration, the physical volume of construction this year appears even less.

Much of the lag is traceable to considerably fewer housing starts this year. This has been blamed on tight money markets which prevailed for the first half of 1960. Money has become more available recently and the rate of housing starts has picked up, but there has not been a sudden rush



Atlanta, Boston, Chicago, Dayton, Detroit, Elmira, Hartford, Los Angeles, New York, Philadelphia (Yeadon, Pa.), Seattle, Portland, Minneapolis, Ockland, St. Louis, Springfield, N.J., and Toronto.

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Here's an expert at work, saving you money at the right time — during design. Like all C/R sales engineers, he's an experienced, well-trained representative whose knowledge springs from a solid engineering background. His ability to sit down with you during the design phase will help develop the most efficient and economical solutions to your problems.

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fications that may save substantial production costs. Again, he will advise against specifications or seal types which he knows from experience will lead to service problems and user dissatisfaction. His personal "value analysis" of your fluid sealing problems, backed by the quality of these Chicago Rawhide products, can save you money. Welcome him when he calls to see you.

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Washington Report

of builders into the housing market. In addition, the demand for new and used homes has not picked up sharply.

In commercial and industrial construction, there has been a sharp increase this year over last. However, it is felt by many here that there will be some tapering off next year.

What could alter the picture is a rising investment in plant and equipment. This would signal a general business assessment that the economy was in an expansive phase. It also would create a large market for materials, metals, and equipment of all kinds.

Anticipate Government Action

Even if there is a recession in early 1961, many economists believe that whatever downward adjustment takes place will be short in duration—and not severe in impact.

Reason for this thinking is that the government will likely take action on three fronts:

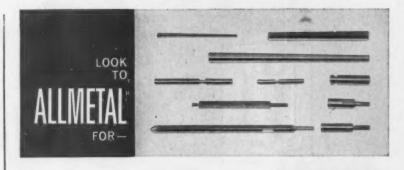
- (1) A possible tax cut.
- (2) Increased federal spending.
- (3) Loose credit policies aimed at stimulating investment.

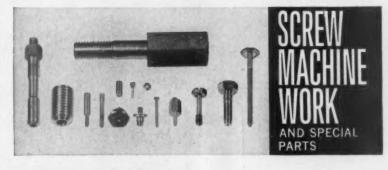
Consumer purchasing power is believed to be able to carry through the adjustment period, just as was the case in the 1957-1958 cycle.

Of course, there are certain conditions that exist today which are different from the 1957-58 period. For example, automobile sales at that time were at sharply reduced levels. Currently, auto sales are running at a level of 6.5 million cars annually, including imports. In addition, construction is slightly stronger than in '57-'58, and production of nondurable goods is also somewhat ahead of the earlier period.

The view the government economists hold is that we have been moving on an economic plateau, and that this cannot continue much longer. A move will have to be made either up or down. If sales are down, then an inventory adjustment will be in order to make the downturn even worse.

—A. N. Wecksler







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- 30 YEARS OF KNOW-HOW RIGID QUALITY CONTROL
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For More Information Write No. 174 on Place Mark Card-Page 32



BOUND BROOK

Bound Brook Oil-less Bearing Co., Bound Brook, N. J. Pioneer in Powder Metallurgy Bearings and Parts. Plants at Bound Brook, N.J. and Sturgis, Mich.

Purchasing Follow-up

Study Standards of Office Equipment

Two standardization projects have been started by the Office Equipment Manufacturers Institute. The programs call for the international standardization of data processing machines and office machines and have been organized under the procedures of the American Standards Association.

Dr. Joseph W. Barker, former dean of the Columbia University School of Engineering, will give guidance to both standardization programs and actively direct the organization of the data processing program. Carl P. Ray, vice president of Royal McBee Corporation, will direct the organization for the standardization of office machines.

Purpose of the data processing program is to set up systems standards—including a common language—which will enable users of electronic data processing equipment to interchange information and programs among computers. At the present time, data processing programs are designed for the equipment of individual manufacturers and must be converted for use in any other manufacturer's product.

The office machines standardization program is designed to set up standard terminology and definitions, standard output formats defining characters and symbols, and other fundamental elements.

Plan \$675 Million Spending Program

U. S. Steel Corporation plans to spend \$675 million for modernization and replacements in the near future, says Bennett S. Chapple, Jr., administrative vice president-commercial.

In addition, Chapple says the company "has spent for this pur-For More Information about ad on facing page —Write No. 175 on Place Mark Card—pg. 32 OCTOBER 10, 1960

pose just in the past 18 months \$588 million." The reason for these expenditures, he adds, is U. S. Steel's confidence "in the growth of our economy."

According to Chapple, U. S. Steel is not the only company that is expressing its confidence in the future. "We know that businesses across the country, large and small alike, are investing comparable sums—an estimated \$36.3 billion or 12% above last year. The decision to make this capital expenditure is undeniably a risk—but it is a calculated risk.

Technology Is Strong

"No matter what you may read and hear to the contrary, a search of the record shows without question that America is stronger in terms of scientific and technological achievement and in military and economic strength than day-to-day impressions would have you believe."

Among the current capital improvements that Chapple cites are: Alcoa is building a \$22 million research center in New Kensington, Pa. Firestone Tire and Rubber has announced a \$120 million expansion and modernization program. And Loew's Theatres,



U.S. Steel Corp.'s capital spending in the near future will total \$675 million, says Vice President Bennett S. Chapple, Jr.

Inc. plans a 50-story hotel called Americana in midtown New York.

Chapple says that his company "is betting on the strength of America—the military, the moral, the economic strength of the nation—and of its people."

See Top Management Recognizing the P.A.

The vital importance of the purchasing agent on the industrial scene has finally been recognized by top management, says industrialist Clarence B. Randall.

In an article entitled "The Myth of the Slick Purchasing Agent" appearing in the October issue of Dun's Review and Modern Industry, Randall discusses modern P.A.'s. "Their jobs have dignity," he says, "and their salaries are commensurate with their new status."

Randall notes that, "for many companies, a savings of 4% on purchases is equivalent in terms of net profit to a 20% increase in sales . . . Every \$5 reduction in purchasing costs is equal to \$2.40 of increased profit after taxes."

Many years ago purchasing was considered strictly a nonproductive activity, he says. That's where the concept of the "slick purchasing agent with the sharp pencil" began.

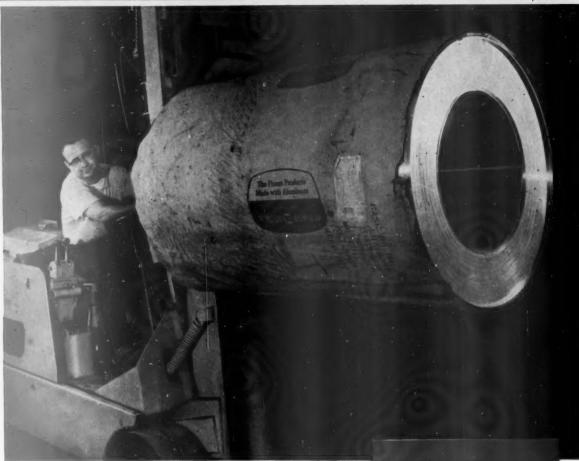
However, he notes that today's competent buyer is a far cry from the P.A. of old. He says that keen purchasing minds are constantly asking such questions as: Is it necessary? Can a less costly material be used? Are there enough suppliers? Are we sufficiently standardized?

Randall says that "top management is now fully alerted to the importance of the receiving end of the business, and fully challenged by the urgency of supporting its efforts."

He says that "the ultimate objective of sound purchasing is

aluminum coiled sheet

. or practically any aluminum mill produc



in stock for fast delivery

from the Reynolds Distributor

Here's a way to add production capacity without enlarging your plant: Convert your warehouse space into working space by depending on your Reynolds Distributor for your aluminum mill products. He stocks the alloys, sizes, shapes and amounts of Reynolds Aluminum you need—and he can get it to you fast. Often he can help you with technical assistance and literature. Depend on your Reynolds Distributor for the aluminum, the service, and the know-how you need. Reynolds Metals Company, P.O. Box 2346-DK, Richmond 18, Virginia.



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Purchasing Follow-up

to build continuing relationships with responsible organizations. To that end, the buyer cultivates his supplier as sedulously as the salesman cultivates his customer."

Extend Air Freight Service to Small Towns

Air freight and surface express service to and from cities without airport facilities has been integrated by an agreement between Eastern Air Lines and Railway Express Agency.

The new cargo pact provides for a single receipt to shippers. It also calls for a single billing, with either prepaid or collect charges, based on a combination of the applicable air and surface rates of the two carriers.

Only one carrier has to be contacted under this new service. Shipments may originate either as air freight or surface express and may use any combination of railroad, air, or trucking movements.

Small Business Urged To Compete for Orders

A materials procurement symposium was held recently by General Electric's flight propulsion division in Cleveland. The reason: to acquaint representatives of nearly 400 small Mid-Western companies with the subcontracting opportunities available.

The symposium was held in cooperation with the regional office of the Small Business Administration. Participants were told that the division would let \$200 million in production contracts next year and were urged to compete for a share of these contracts.

R. J. McElligott, the division's small business administrator, said: "This is a new approach to open up additional competitive supply sources and, at the same time, increase small business participation in our programs."

About 700 jet engine compo-

nents—representative of those normally bought by the purchasing agents of the division—were displayed at the meeting. Production programs, quality requirements, engineering requirements and administrative procedures of the division were also outlined.

Each small business representative was assured of receiving a request for quotation from the purchasing department on those items falling within his capabilities and interests. Since 1957, the division has bought over \$334 million in jet engine components from small businesses similar to those represented at the meeting.

Program on Plastics Available for Meetings

A live educational program, entitled "Getting Acquainted With Plastics," is being offered for inplant presentation to purchasing personnel or for local purchasing agent association meetings.

The program is presented by Cadillac Plastic and Chemical Co. It is available in either technical or non-technical versions, with a consulting mechanical engineer on hand to present the technical program.

The program covers properties and applications of all plastics now available in standard shapes. Emphasis is on 12 major thermoplastic families, along with the fiber glass reinforced plastics.

Two table top displays show available forms, sizes, and colors of 13 plastic families. Sample trays of these plastics are passed through the audience. Color slides and visual demonstrations are also used to illustrate the information. And a comprehensive selection of technical literature and plastics design and fabrication data is displayed.

There is no charge for the 35 minute program, which is generally followed by a question and answer period. However, a minimum audience of 20 people is required. (Turn Page)

"We order all our recording charts from this one book!"



You save money, cut down on paper work, and keep engineering people happy when you buy recording charts from this new GC Stock List. More than 15,000 circular, strip and rectangular charts are listed here, cross-indexed by instrument manufacturer and type—most are available for immediate shipment.

You'll save money—GC Recording Charts are more economical and you can order in large quantities, for periodic shipments. You'll reduce paper work—you'll write fewer orders—and deal with only one chart representative. Your engineering people will be happy—GC Recording Charts will give them the performance they demand.

This 92-page stock list is factual and it's free. Let us send you a copy. Also, send us a chart number or two, we'll send you samples. Have your engineers put these GC Recording Charts to every test in the book—we'll rest our case on the results.



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For More Information Write No. 177 on Place Mark Card—Page 32



Another Tinnerman Original ...

Tinnerman Push-On SPEED NUTS® fasten with a "bite" that can't shake loose

In a split-second, this low-cost Tinnerman Push-On Speed Nut arches its spring-steel back, then bites hard to make a positive attachment on unthreaded studs, rivets, tubing, nails, jewels, small housings.

Application is easy—finger pressure starts it; a push with a simple hand tool locks it under live spring tension. No threads to worry about, no spot welding, no riveting, no special inserts, bushings or washers necessary. Elimination of extra parts and assembly operations may save you up to 50% or more in fastening costs.

Push-On Speed Nuts lock on everything from thermoplastics to die-cast, chrome-plated steel. Hundreds of variations to fit any shape or size stud—from very small diameters to larger rectangular shapes. Some Push-Ons have "caps" that cover exposed shaft, axle or stud ends.

Check Sweet's Product Design File, section 8-T. Or look under "Fasteners" in the Yellow Pages and call your Tinnerman representative for complete information and samples. Or write to:

TINNERMAN PRODUCTS, INC. Dept. 12 · P. O. Box 6688 · Cleveland 1, Ohio



CANADA: Dominion Fastonors Ltd., Hamilton, Outaria, GREAT BRITAIN: Simmoods Aerocossaries Ltd., Treferest, Weles. FRANCE: Simmoods S. A., 3 rou Salomon de Rothschild, Suressus (Seine). GERMANY: Mocane-Bundy Embl., Heidelberg.

Purchasing Follow-up

Thus far, the program has been presented to 50 local chapters of the National Association of Purchasing Agents. It has also been shown to 150 chapters of other professional organizations.

Complete information about the program is available from the company at 15111 Second Avenue, Detroit 3. Mich.

Steel Shipments by Warehouses Improving

For the first time in eight months, steel warehouse shipments of industrial steel products have shown an improvement over previous weeks, reports the Steel Service Center Institute.

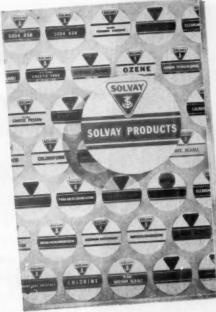
Robert G. Welch, executive vice president of the Institute, says, "We are hopeful this upward trend in tonnage shipped, modest as it is, is a signal of firmer sales to the metalworking industry this fall.

"The first signs of improved business started to appear in the first few days of September," says Welch. "The trend varies by trading area, product line, and individual company but the trend was definitely there."

Welch cites three factors as those most frequently mentioned by the warehouses in contributing to better business: reduced customer inventories, relaxed interest rates, and a pickup in expenditures for government projects.

According to Welch, the pickup in the South has been more pronounced than in other sections of the country. West Coast deliveries have been at a slow and steady level for several months. Both eastern and mid-western companies report a minor increase in shipments during September.

Steel warehouse inventories are down to 3.4 million tons but, says Welch, some companies want to cut them even more. "Improved inventory control methods," he says, may permit the warehouses to reduce inventories to 3.3 million tons "and still provide important customer service."



This CHEMICAL PURCHASING GUIDE

"talks" P.A.'s language!

Here . . . in this easy-reading, nontechnical guidebook . . . are all the facts you need about Solvay® industrial chemicals before you buy.

You'll find concise information on uses, physical properties, grades, containers, handling. 61 pages of valuable data skillfully indexed to help you quickly locate any product in the extensive Solvay line . . . soda ash, caustic soda, chlorine, special alkalies, ammonium and potassium products, hydrogen peroxide, chlo-

romethanes, chlorobenzenes, calcium chloride, chromium chemicals.

This practical information is based on over 75 years of close work with such leading industries as . . . paper, textile, glass, leather, metal finishing, chemical processing. Mail the coupon for your free guidebook.

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Everything you want in Multiple Nut Setters...

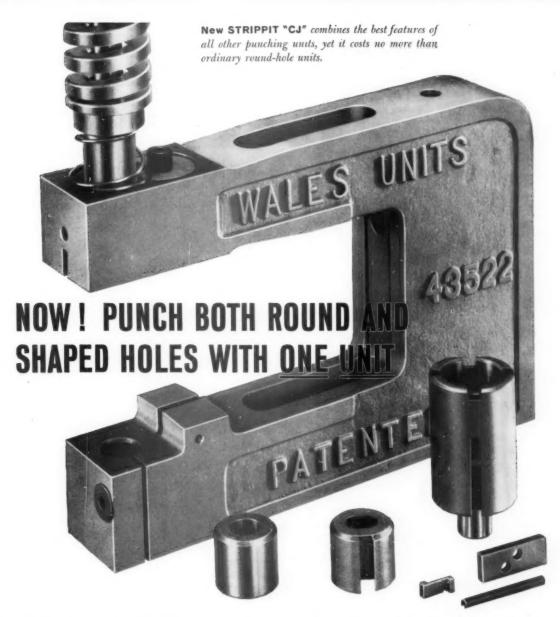
and more!

Speed production, multiply profit on any assembly of two to twenty-two nuts or screws. Thor multiples are custom engineered to your exact assembly situation. All fasteners are secured simultaneously to identical torque. Thor multiples can be engineered for any pattern, any product. Thor multiples are now in use in the assembly of such widely diversified products as floor mops and carburetors. Write today for Thor's complete automation manual on multiple fastener settings.

Thor Power Tool Company,

Aurora, Illinois. Branches in all principal cities.





Here's greater versatility than ever before in a self-contained hole punching unit. STRIPPIT "CJ" holders and die bases are keyed to take shaped parts. And you pay no more for the "CJ" unit than any competitive round hole unit.

If your current metalworking requirements call for round holes in anything up to 1/4" mild steel, the STRIPPIT "CJ" fills the bill. But let's say you get a future job that requires obround, square or rectangular holes. Simply substitute the proper shaped punches, punch guides and die buttons.

They're always in stock. You save the cost of a complete new unit or the inconvenience of returning your existing unit to the factory for keying.

Of course you get the same quality which has made STRIPPIT famous for 35 years. Holders are metallurgically correct for their punching range. And a far superior one piece shoulder head punch is standard in both the round and shaped series.

Write now for full information and prices on the new time-saving, money-saving STRIPPIT "CJ".

WALES 2

229 Buell Road Akron, New York

In Canada: Strippit Tool & Machine Company, Brampton, Ontario

In Continental Europe: Raskin S. A., Lausanne, Switzerland In the British Isles: E. H. Jones (Machine Tools) Ltd., Hove, Sussex, England For More Information Write No. 181 on Place Mark Card-Page 32

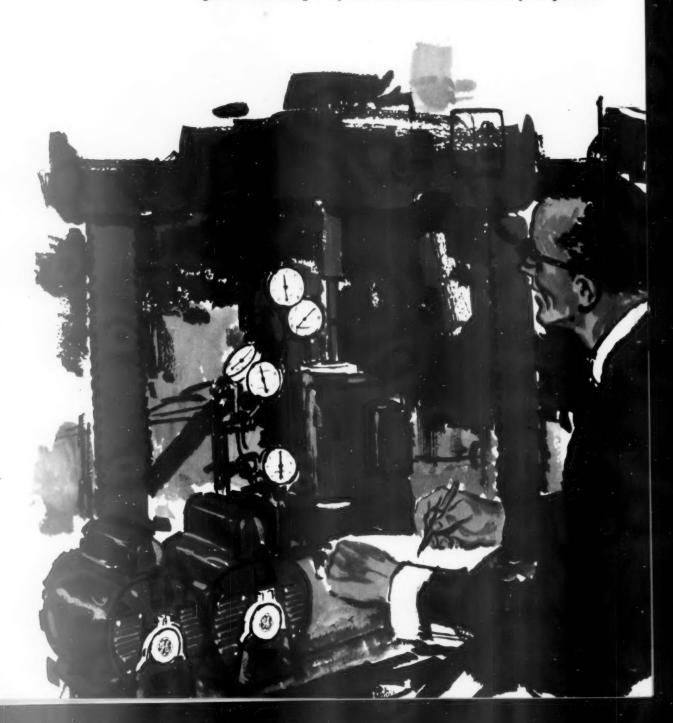
ОСТОВЕК 10, 1960

For More Information about ad on following page Write No. 182 on Place Mark Card—pg. 32→

You get MORE THAN A MOTOR with General Electric's

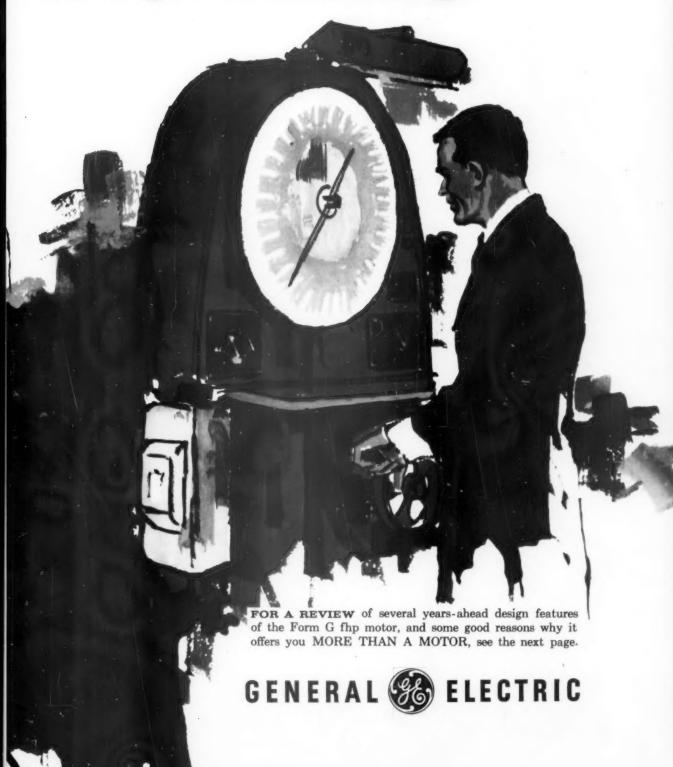
Years-Ahead

Form G leadership among fhp motors isn't accidental. We work hard at it, constantly improving, constantly innovating. We've found it's the best way to help our customers keep ahead of the changing demands in their industries. It's good business on our part. It's good business on your part too . . . to make sure you get the advantages a years-ahead motor can offer your product.



Form G...for example...

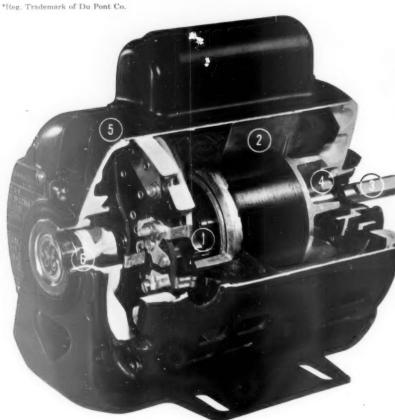
Design Leadership



These years-ahead Form G motor features mean long life, reliable performance

- 1. QUIET SWITCH—specially-designed composition washer in Form G motors cushions start-stop click; maintains positive snap-action; has been tested to last 3,500,000 operations.
- 2. LONG-LIFE STATOR—heavy-duty stator bonding dip and Mylar* insulation protect against damage caused by heat, stress, moisture. Stator clamps provide additional rigidity.
- 3. RUST-RESISTANT SHAFT—special gunmetal-like treatment of motor shaft resists rust and corrosion, simplifies product service. Fans, pulleys, and couplings are easy to remove.





- 4. LONG-LIFE LUBRICATION Over 50% more oil than in old-design motors and an efficient oil retention system contribute to motor's doubled lubrication life; cut maintenance.
- 5. ACCURATE ALIGNMENT—disk-type end shield, heavily ribbed for rigidity, places rabbet and bearing in same plane, provides accurate bearing alignment, long motor life.
- 6. THRUST PROTECTION interlocking washer assembly withstands normal thrust from any direction, regardless of motor angle; also acts as an oil seal for long motor life.

Only General Electric Form Gs give you MORE THAN A MOTOR

- 1. YEARS-AHEAD DESIGN LEADERSHIP—consistent leadership by G.E. keeps Form G customers "out front".
- 2. EASE OF ASSEMBLY—Form G motors provide assembly-line savings in time and money.
- 3. EXPERT APPLICATION AID—G-E engineers are always available to help solve unusual motor applications.
- 4. ON-TIME DELIVERY—multi-plant facilities assure you reliable, prompt delivery of the exact motors you need.
- 5. VERSATILITY PERSONIFIED—a Form G motor can meet almost any design requirement.

- 6. FAST, LOCAL SERVICE—a nationwide network of G-E Electric Motor Service Stations means service is always close at hand.
- 7. QUALITY CONTROL every Form G motor is thoroughly tested at all stages of production to assure you long, dependable performance.

Make sure you get MORE THAN A MOTOR when you select fhp drives for your product . . . choose General Electric Form G motors, available in NEMA 48 and 56 frames. For more information contact your nearby General Electric Apparatus Sales Office or write Section 702-108, General Electric Co., Schenectady 5, N. Y.

GENERAL (%) ELECTRIC



NOW IT'S CALLED VALUE ANALYSIS

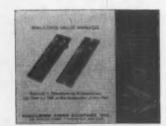
As any Spaulding customer can tell you, the only thing new about Value Analysis is the name.

Spaulding has been rendering this service for years with engineers who evaluate a part or assembly, then show how it can be made better, easier and at a lower cost with a Spaulding Material, processed by Spaulding's own Fabricating Department.

The unique characteristics of Spaulding Industrial Plastics and Vulcanized Fibre hold the same advantages for *your* product.

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How Okonite Cable 'bility protects plant profits at Lukens Steel

Cable 'bility (ca'ble bil' i ty) new word.

Noun. 1. Ability to design and manufacture electrical cables that give outstanding performance.

2. Having long background and wide experience in cable research and application. 3. Possessing keen understanding of customers' problems. Implies eagerness to serve faithfully and dedication to progress. Syn. The Okonite Company.

Lukens Steel Company, like thousands of leading corporations throughout the world, makes extensive use of Okonite Cable'bility. Lukens has found that long-lived, dependable Okonite cables are indispensable on important applications to maintain profitable production—an assurance based on the excellent service records of Okonite cables in their own and other plants.

Okonite cables will meet your most challenging specifications with long-lasting protection, maintenance-free service. This is typified by the proved service record of Okolite insulation—used by Lukens Steel for its critical high voltage feeders. This insulation has a 30-year record in all types of installations demanding resistance to ozone, moisture and heat, as well as high dielectric strength.



NATION'S LARGEST ROLLING MILL—Lukens' 206-inch mill is a good example of essential mass production equipment whose continuous operation is assured by the use of Okonite cables in crucial power circuits.



LUKENS' BRANDYWINE SUB-STATION steps down power for the existing Lukens plant and proposed expansion. From this key substation the main feeder for the expansion is Okolite-insulated cable for 23kv ungrounded service—a tribute to Lukens' past experience with Okonite cables,

Send for more information about this long-lived, widely used insulating material and its applications. The Okonite Co., Subsidiary of Kennecott Copper Corp., Passaic, N. J.



where there's electrical power... there's OKONITE CABLE



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EAST ROCHESTER, N. Y. Dynatherm, Inc. 607 West Commercial Street Phone: Ludlow 6-0082

KNOXVILLE, Tennessee Harold J. Melloy 2100 Ailor Ave. P. O. Box 3207 Phone: 2-5911

MILWAUKEE 13, Wis. John Weiland, Jr. 7105 Grand Parkway Greenfield 6-7161

ARDMORE, Pa.
Austin L. Wright Co.
P. O. Box 561
1 W. Lancaster Ave.
Midway 2-5113

An almost fantastic challenge! . . . Quinn-Berry engineers and craftsmen replaced the 4 piece brass, phosphor bronze and strip steel assembly of the actuator in the Automatic Voting Machine by a single molded nylon part . . . the manufacturer effected an equally fantastic saving.

Note in the above illustration how the single molded nylon part, shown in actual size, eliminated a tedious and delicate assembly job on the manufacturer's production line. Molded to the most exacting tolerances, this nylon actuator is self lubricating, quiet and completely accurate in operation, a vital requisite in Automatic Voting Machine operation.

Such challenges are being met daily at Quinn-Berry where the Unusual is Routine. Consult with us on the use of molded thermoplastics you too may be able to effect amazing cost savings.



2609 WEST 12TH STREET, ERIE, PA.

CORP.
CUITOM MODRIES
OF ALL TIME OF
CHETHOPLASTICS

For More Information about ad on facing page -Write No. 184 on Place Mark Card—pg. 32 OCTOBER 10, 1960

New Series of Marsh Needle Valves in 316 STAINLESS STEEL -Valves that take you out of your corrosion problems Now still wider service range for the valves that have set new standards in the needle throttling field. A full line of Marsh Needle Valves are immediately available in 316 stainless steel in the new series 1936. Identified by blue handles Here is a valve that opens up the wide range of corrosion-resistant applications bracketed by 316 stainless. It is a valve that gives precision throttling at pressures from a few pounds through 6000 psi ... a valve for any temperature from minus 100° F. to plus 500° F. thanks to the "Marpak" packing system making use of precision moulded Teflon. Only Marsh experience—in both valve making and instrument making-could have produced The Marsh touch these valves. Like other Marsh needle valves, they the precision touch—in every detail are available in globe and angle patterns and in panel mounted types; sizes, 1/8", 1/4", 3/8", 1/2", 3/4" and 1". The 316 stainless valves are fully de-Accurately machined stem, precision ground and rolled. Longer inlet and outlet thread chambers insure tight make-up. scribed in Bulletin NV-3. Marsh Needle Valves are also available in 416 stainless steel (identified by green handles) and in mild steel (identified by Packing as corrosion-resistant as the valve. yellow handles.) MARSH INSTRUMENT COMPANY, Dept. G, Skokie, III. MARSH Needle Division of Colorado Oil and Gas Corporation Marsh Instrument & Yalva Co. (Canada) Ltd. 8407 183rd St., Elmonton, Albarta Rouston Branch Plant, 1121 Rothwell St., Soct. 15, Houston, Texas

For More Information Write No. 186 on Place Mark Card-Page 32

For More Information about ad on facing page Write No. 187 on Place Mark Card—pg. 32→ PURCHASING



as the leading independent producer of POWDER METAL PARTS

(over 150,000,000 of them annually)

We're told, often enough, that "There's a difference in dealing with Keystone."

In looking over some of the reasons-why, it occurs to us that because we were pioneers in powder metallurgy, perhaps we do have a special kind of perspective about our work. Over and beyond the essentials of a sound organization and production facilities to meet your requirements for almost any quantity of parts . . . on time, and at low cost . . . we have qualifications that are inseparable from the Keystone way of doing things.

One of them is alert interest in your problems (we learn more that way). Another: creative

approach to your designs—which keeps us flexible. And one of special importance: objective evaluation—if application is unsound, we're frank to say so.

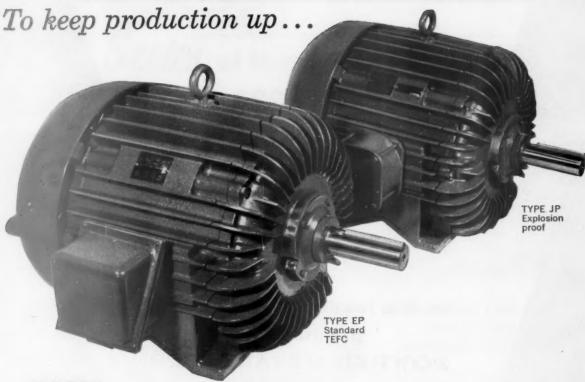
Perhaps we should conclude with progressiveness. Facts are, Keystone was first to produce commercially powder metal parts of alloy and stainless steels; first in the field to offer lower-than-commercial tolerance bearings, and first to provide corrosion-resistant finishes on iron powder parts.

For these and other reasons, a great many people turn to Keystone for the powder metal parts their businesses require. It's easily possible that you'd enjoy having us work for you, too. Write, and let's talk it over.



POWDERED METAL PARTS DIVISION





PICK FROM THIS PROTECTED PAIR...

Here's a power-packed pair of Wagner® totally-enclosed fan-cooled motors—Type EP, standard, protected against damage from dust, abrasive, fumes, steel chips or filings; and Type JP, explosion-proof, for safe use in specified hazardous locations.

They'll keep your production rates up, delivering full rated horsepower under the toughest conditions... staying on the job with dependable, continuous service that means peak output. They're the perfect pick, for individual machines or for automated lines.

In the design illustrated, these motors are built in ratings through 100 hp in NEMA frame sizes 182-445U. Let your Wagner Sales Engineer show you how this protected pair (or larger Wagner enclosed motors through 500 hp) gets the job done. Call him, or write us for Bulletin MU-224.

Wasner Electric Corporation

6360 PLYMOUTH AVENUE, ST. LOUIS 33, MISSOURI



HEAVY-DUTY BALL BEARINGS...The ball bearings used in these motors are of the highest quality, with more than ample capacity to provide long, troublefree service under heavy leads.



BEARINGS CAN BE RELUBRICATED... Factory lubrication will last for many years under normal service, but openings are provided to permit relubrication that adds years to meter life under severe conditions.



WH60-19

SECURELY SEALED FOR LOW MAINTE-NANCE...Both ends of these motors have running shaft seals to keep the bearing clean. Bearing housings are effectively sealed to prevent escape of grease.

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For More Information Write No. 188 on Place Mark Card—Page 32



Lock seaming ceases to be a problem when you use Weirkote Zinc-Coated Steel. This modern continuous-process tightly bonded zinc-coated steel won't peel, chip or flake. Work it to the limits of the steel base itself and the zinc coating remains intact assuring you of the complete corrosion protection that only zinc can give. A Weirton representative will be happy to supply more complete information on Weirkote—another fine product of the Weirton Steel Company, Weirton, West Virginia.



WEIRTON STEEL
Weirton, West Virginia



Weirton Steel is a division of NATIONAL STEEL CORPORATION

Information For Your Catalog Files

ALLOY TUBING

Bulletin No. 71 covers small diameter super alloy tubing. The 16-page catalog includes text, tables, and photographs. Presents creep rupture data for eight alloys for service up to 1650 degrees F. A comprehensive table provides the AISI number, availability, form, and chemical composition. Normal size limits, including minimum and maximum wall, are tabulated.

Superior Tube Company

Write No. 1 on Place Mark Card-Page 32

BALL BEARING UNITS

Catalog 454 presents a line of ball bearing units. Features comprehensive technical and engineering data, diagrams, illustrations, and typical applications.

Stephens-Adamson Mfg. Co.

Write No. 2 on Place Mark Card-Page 32

CONVEYORS

An eight-page bulletin that describes small parts handling conveyors. Explains and illustrates construction features and illustrates products and applications. Also discusses two magnetic conveyors.

Rapids-Standard Co., Inc.

Write No. 3 on Place Mark Card-Page 32

ELECTRIC HEATERS

Bulletin GEC-1005K lists product and application data for finned tubular, cartridge, strip, insertion, and vane electric heaters. The 48-page catalog includes information on heater selection. Photos and dimensional drawings are shown.

General Electric Company

Write No. 4 on Place Mark Card—Page 32

FLOW METERS

Catalog 295-1 covers flow meters using the vortex-velocity principle for measuring liquids and gases. Describes measurement of volume rate at line conditions.

Minneapolis-Honeywell Regulator Company Write No. 5 on Place Mark Card—Page 32

GENERATORS

Bulletin 700 (A, B) describes ac and dc generators and motor generators. Covers mounting on base rails for direct coupling or belt drive, on driving shafts, or in parallel or series operation.

Howell Electric Motors Company

Write No. 6 on Place Mark Card-Page 32

HEAT EXCHANGERS

Bulletin 111 describes multi-tube double pipe heat exchangers. The two-color brochure explains design features and applications. Cut-away drawings show details of the shell-to-tube closure and the return bend housing.

Brown Fintube Company

Write No. 7 on Place Mark Card-Page 32

HYDRAULIC CRANES

Bulletin 3000 describes multi-purpose mobile hydraulic cranes. The eight-page two-color illustrated catalog also covers accessory equipment—including electric power packs, extension booms, barrel grips, crane wells, and stabilizers. In-plant photographs show practical uses.

Ruger Equipment, Inc.

Write No. 8 on Place Mark Card—Page 32

LATHES

A bulletin on a series of precision speed lathes. Describes one-motion control, whereby a single lever starts the lathe spindle, selects any speed up to 4800 rpm, or changes speed during operation.

Rivett Lathe & Grinder, Inc.

Write No. 9 on Place Mark Card-Page 32

MAGNETIC STARTERS

Brochure 14-B2 describes magnetic starters with unitized construction. The bulletin also covers push-button or selector switches which are added in the field.

Furnas Electric Company

Write No. 10 on Place Mark Card-Page 32

MOTORS

Folder SE-L2064 contains technical characteristics, specifications, ratings, and outline dimensions of 50, 150, and 250 ounce-inch synchronous motors. The eight-page bulletin describes conventional, militarized, and explosion-proof types.

Superior Electric Company

Write No. 11 on Place Mark Card-Page 32

PORTABLE LIGHTING

Bulletin B76 describes portable lighting systems and components. The 12-page illustrated catalog covers lamps, extensions, sockets, and other unitized assemblies. Provides information on types, construction details, and varieties.

Joy Manufacturing Company

Write No. 12 on Place Mark Card-Page 32

For More Information about ad on facing page Write No. 190 on Place Mark Card—pg. 32→

PURCHASING





Sems

PERMIT HOPPER-FED DRIVING OF LOCK WASHER AND SCREW!

There's an opportunity for real productiontime savings in Sems. They're preassembled to eliminate handling of separate lock washers and screws on the assembly line... can be applied with a hopper-fed screwdriver for extra man-hour economies. Broad selection of types and sizes available, Inquire today.



38
Sources

throughout the nation for fast, efficient service AMERICAN SCREW COMPANY Willimgntic Connecticut

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THE BLAKE & JOHNSON CO.
Waterville 14. Connecticut

BUTCHER & HART MFG. CO.
Altoona, Pennsylvania
CENTRAL SCREW COMPANY

CENTRAL SCREW COMP Chicago 9, Illinois Keene, New Hampshire Frankfort, Kentucky

CONTINENTAL SCREW CO.
New Bedford, Massachusetts

CRESCENT SCREW PROD. CO.
Rockford, Illinois

ECONOMY SCREW CORP.
Chicago 14, Illinois

ELCO TOOL & SCREW CORP.
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FEDERAL SCREW WORKS

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HARVEY HUBBELL, INC.

Bridgeport 2, Connecticut
INDIANA METAL PRODUCTS
DIVISION, TEXTRON INC.

DIVISION, TEXTRON INC.
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KENTUCKY SCREW CO.
Louisville, Kentucky
LAKE ERIE SCREW CORP.

Cleveland 7, Ohio
THE LAMSON & SESSIONS CO.

MID-AMERICA FASTENERS INC.

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MIDLAND SCREW CORP. Chicago 32, Illinois

NATIONAL LOCK COMPANY Rockford, Illinois

THE NATIONAL SCREW & MFG. CO. Cleveland 4, Ohio Los Angeles 22, California PARKER-KALON DIVISION, GENERAL AMERICAN TRANSPORTATION CORP.

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PROGRESSIVE MFG. CO., DIV. OF TORRINGTON CO.

RELIANCE DIVISION, EATON MANUFACTURING CO. Massilon, Ohio

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RING SCREW WORKS

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ROCKFORD SCREW PRODUCTS CO.

ROCKFORD SCREW PRODUCTS CO Rockford, Illinois RUSSELL, BURDSALL & WARD

RUSSELL, BURDSALL & WARD BOLT & NUT CO. Port Chester, New York Los Angeles 33, California

SCOVILL MANUFACTURING CO.

SOUTHINGTON HDWE, MFS. CO. DIV. OF SCREW & BOLT CORP. OF AMERICA Southington, Connecticut

SHAKEPROOF DIVISION,

THOMPSON-BREMER & CO.
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SCREW & BOLT CORP. OF AM.

SEMS DIVISION, TEXTRON INC.

TRIPLEX SCREW CO. Cleveland 9, Ohio

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Chicago 8, Illinois

WALES-BEECH CORP.

For information on SEMS sources in Canada, contact:

CANADA ILLINOIS TOOLS LTD.
SHAKEPROOF/FASTEX DIVISION
Toronto, Ont., Canada

FOR GREATER PRODUCT DEPENDABILITY

Specify SHAKEPROOF® LOCK WASHERS on Sems

Each Shakeproof Lock Washer is especially designed to insure a firm grip in a specific type of application. They come in a wide variety of styles and sizes—all engineered for mechanical pre-assembly. Save time . . . order from the source nearest you.













Sems

pre-assembled screw and lock washer SEMS is a development of Illinois Tool Works, Chicago



"Call FOSTER

for track...PLUS"



Whether you call for a big shipment of "high iron" or a single guard rail, Foster gives you track "plus"—all the rail you need, and all the accessories and tools to complete the job.

You can get any standard rail sections including lower-cost Foster Quality Relayers, frogs, switches, tieplates, accessories, tool cars and dollies, hand tools, gauges, levels and other track items including CRANE RAIL. We will also supply steel-sheet piling and construction products for maintenance-of-way.

Another "plus": Foster's warehouses are located all over the country, all carry large stocks. So you get the advantage of "complete package" shipments, lower freight rates, prompt deliveries. For assistance in ordering, call the Foster Track Specialist near you.

Write L. B. FOSTER CO. for Track Catalog PA-10 Pittsburgh 30 · New York 7 · Chicago 4 · Houston 2 Los Angeles 5 · Atlanta 8 · Cleveland 35

Faster From Foster

Pipe · Piling · Rail

For More Information Write No. 154 on Place Mark Card-Page 32

Catalog Files

(Continued from page 44)

ROTARY SWITCHES

Bulletin Number 22 contains complete information on rotary switches. Includes photograph, dimension drawings, technical data, electrical ratings, and special assemblage drawings.

Electro Switch Corp.

Write No. 13 on Place Mark Card—Page 32

STAPLING EQUIPMENT

A 32-page catalog that covers a line of automatic stapling and tackling equipment. The bulletin describes and illustrates applications. Also includes information on staples and air-operated tools.

Fastener Corporation

Write No. 14 on Place Mark Card—Page 32

THREADING TOOLS

Bulletin DT-60 describes and illustrates a line of threading tools. The brochure covers specifications, parts lists, ordering instructions, and thread data.

National Acme Company

Write No. 15 on Place Mark Card-Page 32

TRANSFER PRESSES

An eight-page illustrated brochure describing a line of transfer presses. Covers five standard machines and typical applications. Complete specifications are included.

Baird Machine Company

Write No. 16 on Place Mark Card-Page 32

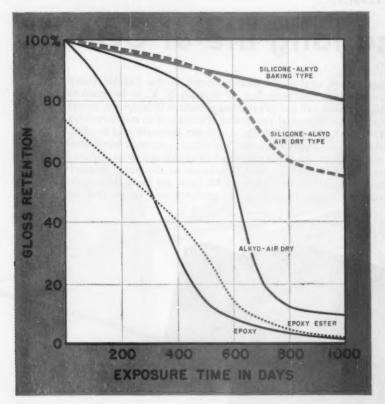
VALVES

An illustrated catalog sheet that describes pressure reducing and relief valves. Includes drawings, capacity charts, features, operation, applications, and ordering information.

Atlas Valve Company

Write No. 17 on Place Mark Card-Page 17

Why Hire Part-Time Paint?



Silicone-based paints last longer, cost less

It makes little sense to keep an employee that doesn't have the qualifications or capacity to do the job. Yet this is, in effect, exactly what many plants do when they use maintenance paints that break down shortly after application. To be sure, a coat of paint doesn't punch a time clock or demand fringe benefits, but it does have to work twenty-four hours a day. Thus, its cost of "employment" warrants considerable attention.

In practice, it's the interval between paintings that really determines your cost. The longer a paint film lasts, the less it costs to use—in time, labor and material. But perhaps most important are the costs that can't be calculated—for example, production lost when facilities must be shut-down for repainting.

Here's how you can save. By reducing labor costs and production down-time, paints based on Dow Corning Silicones make important contributions to your profit picture. Silicone paints, of course, take just as long to apply as do conventional paints. And like other high quality products, they are premium priced. But once they're on, they stay on, and on, and on, and then your savings start to pile up.

What makes silicone-based paints the good investment they prove to be? The simple answer is—greater resistance to the many enemies that maintenance coatings must face day and night. Included on this list are heat, cold, moisture, rust, corrosion, salt spray, ozone and the many other paint-killers that assault plants and equipment.

Hot spots no trouble now. When exposed to heat that, on some stacks and mufflers, soars to 1000 F, ordinary paints crack, peel and burn away. Moisture gets in. Rust, corrosion and trouble follow fast. But not so when you're using paints made with Dow Corning silicone resins. They are at their best when the "heat's on".

Some equipment is hot on one end and cold on the other . . . silicone paints hold tight on both ends. Film, gloss and color retention are excellent as well. There's no unsightly chalking, fading or streaking.

Concerning color: silicone-based coatings are now available in almost any color desired. Hot-running equipment and piping can be color-coded for increased safety and efficiency. And as some refineries have learned, a plant made more colorful and attractive helps improve public relations.

Best for your products, too. Silicone paints will work just as hard for you on the products you sell. Product finishes based on silicones keep color and gloss without fading or chipping just as their maintenance-coating fellows do. They stand up longer to hard wear, heat and abuse . . . improve customer satisfaction.

It all adds up to this: paint maintenance is probably costing you a lot more than it should. In many cases, this cost can be cut in half by using silicone paints that last up to 100% longer. So every time you think about paint — for maintenance or products — consider paints based on Dow Corning Silicones. Most leading paint manufacturers now offer these longer lasting coatings . . . coatings that really protect valuable plants and equipment.

Send for your copy of "Why Silicone-Based Paints Mean Less Maintenance". Write Dept. 7410.



Dow Corning CORPORATION

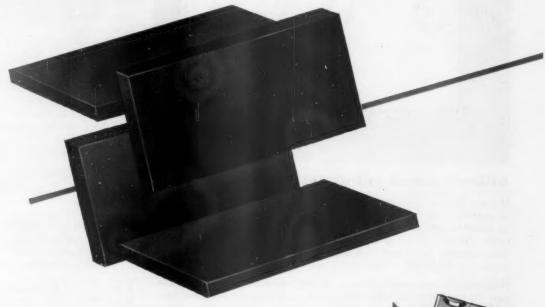
MIDLAND, MICHIGAN

TLANTA SOSTON CHICAGO CIENTIANO DALLAS LOS ANGELES NEW YORK WASHINGTON, D. S.

GRAPHITAR VANES

and long life of CONDE

This rotary positive displacement pump, engineered and produced by the Dri-Air Pump Department of the Conde Milking Machine Company, Inc., of Sherrill, N. Y., is designed to deliver clean, dry air or gas for high vacuum and low pressure applications in hospitals, dental offices, chemical or pharmaceutical plants, industrial processing systems and in metalworking plants. Thanks to vanes of GRAPHITAR, the CONDE Dri-Air Pump gives years of troublefree, continuous operation at maximum recommended vacuum and speed . . . without lubrication! The GRAPHITAR pump vanes are self-lubricating and are seated by centrifugal force. Operating with a minimum of friction, they become increasingly efficient as the pump is used. In addition to their self-lubricating properties, the GRAPHITAR vanes are hard, light, nonsticking, non-warping and chemically inert. Perhaps these qualities can be utilized to advantage in your products.



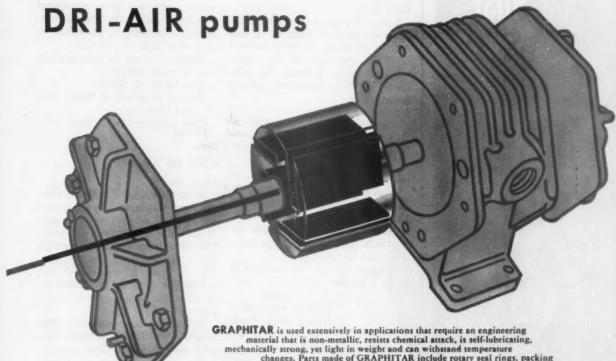
Bulletin #20 includes detailed design data along with properties, characteristics and typical ap-plications of GRAPHITAR. Write for your free copy. If you have questions concerning the incorporation of GRAPHITAR parts in your products, our engineers will be glad to assist you.

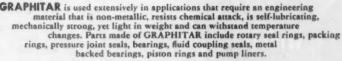


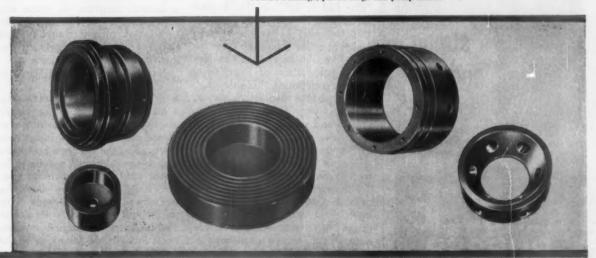
UNITED STATES

GRAPHITAR® CARBON-GRAPHITE • GRAMIX® POWDER METALLURGY • MEXICAN® GRAPHITE PRODUCTS

help insure efficiency







GRAPHITE COMPANY

DIVISION OF THE WICKES CORPORATION, SAGINAW 15, MICHIGAN

For More Information Write No. 192 on Place Mark Card-Page 32



For Mare Information Write 155 on Place Mark Card—Page 32

Letters To The Editor

EXCELLENT ADVICE

Dear Sir:

I was pleased to read Paul Farrell's editorial on page 69 of the August 15 issue. Congratulations on your handling of this very touchy matter. I think the editorial contains excellent advice for all of us.

C. F. Teeple
International Minerals &
Chemical Corp.
Skokie, Illinois

Dear Sir:

With reference to Paul Farrell's editorial of August 15, I would like to voice one criticism. I think it was sufficiently important to use as a cover rather than have it appear on page 69.

Congratulations on calling a

spade a spade.

W. B. Rogers Cornell University Ithaca, New York

Dear Sir:

Congratulations. I believe that Paul Farrell's editorial entitled "The Lid Is Off", in the August 15 issue of Purchasing Magazine was the best I have seen, and feel that more should be done by men like him as well as the National Association of Purchasing Agents, concerning this subject.

I do wish to mention, however, that it is very difficult for me to understand why some purchasing magazines will blatantly accept full page ads which offer gift programs of one sort or another to buyers based on tonnage or dollar purchases. It would seem to me that purchasing people, themselves, are somewhat hypocritical if they accept ads of this nature in their own house organs.

I think you will find it of interest to know that recently in Chicago the Ben-Ron Corp. offered a plan of trading stamps to buyers of steel. These stamps can be exchanged for gifts. In other words: Payola. With regard to this, I wish you to know that I am

on the National Association of Purchasing Agents' steel committee, and we have circulated this latest information to all committee members in an effort to stop this type of practice.

Again, I wish to congratulate you on your article.

Charles R. C. Steers
Russell, Burdsall & Ward Bolt
and Nut Co.

Port Chester, New York

COST OF AN ORDER

Dear Sir:

Sometime ago, I believe, Purchasing Magazine ran an article on the cost of processing a purchase order in various size plants. For the purpose of evaluating our own operations, can you supply us with a reprint of this article, or give us an indication of what the cost might be for a plant our size?

We employ approximately 2000 people with total purchases run-

ning almost \$12 million.

We are interested in knowing what plant our size has set up a formal program of value analysis. We would like to be able to contact such a company and perhaps benefit from their experience.

Name Withheld Upon Request

· We are presently conducting a survey to determine the cost of placing an order in various size plants and in various industries. Because of the survey's complexity, the results will not be published until late fall or early winter. Previous surveys-both by ourselves and others-have been too general in nature. To get a good usable figure, a detailed analysis must include the functions of the purchasing department, number of orders placed, type of industry, and the like. In regard to a value analysis program: Frank Jenkins at Sprague Electric Co. in North Adams, Mass., with about \$20 million in purchases, has an excellent record.

Why not your brand?

See the "wrap-around" end panels on this new carton? They give beer and other pack users all-important end panel identification—usually a premium feature—for the cost of regular open-end cartons. Important? Vital! Thirty-five per cent of all store pack displays show carton ends only!

The new "Contour-Pack," an exclusive, new design development by Packaging Corporation of America, offers better sales, lower package cost, faster packaging.

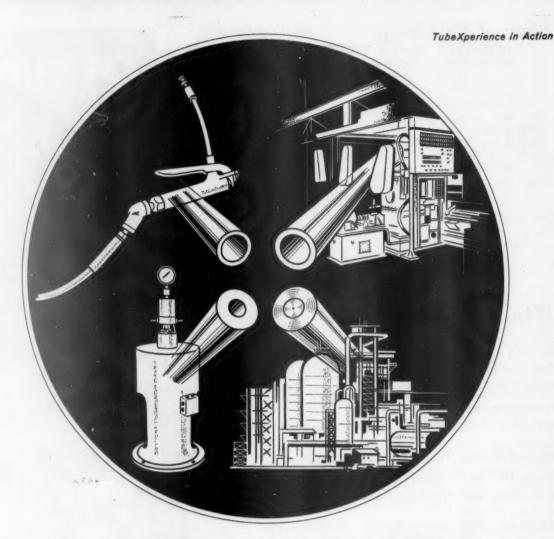
This is but one of countless ways in which Packaging Corporation of America's concept of Planned Packaging, implemented through integrated national facilities, produces better packaging . . . more sales. Whether your requirements are large or small, regional or national, we welcome the opportunity to help you.



Packaging Corporation of America

Administrative Offices: Grand Rapids, Michigan; Quincy, Illinois; Rittman, Ohio

Cartons · Containers · Displays · Egg Packaging Products · Molded Pulp Products · Paperboards



Superior tubing makes pressures behave

whether 125, 5000, 30,000 or 100,000 psi

Superior small-diameter tubing makes pressures behave whether low, medium, high or super. Superior pressure tubing can be roughly divided into two groups: commercial pressure tubing for use in a range up to 20,000 psi; premium super pressure tubing to handle pressures from 15,000 to 100,000 psi. Both ranges can be handled effectively by a number of different analyses, depending on service requirements. Typical applications for Superior general-purpose pressure tubing include pressure tools, machine tools, heat exchangers and condensers. Superior super-pressure tubing is found in hydrogenation process equipment, high-pressure autoclaves, and pilot plant installations in chemical and oil refining plants.

All Superior pressure tubing offers many advantages. It helps prevent critical failures and downtime. It assures long service life, high fatigue strength, excellent corrosion and chemical resistance. In the range from 15,000 to 100,000 psi, Superior super-pressure tubing is a premium product. It is produced from specially selected raw materials. Inside surfaces are conditioned to remove fissures and other defects. During processing, special degreasing operations are performed, and the inside diameters are conditioned to insure a clear, smooth surface. Two types are available: a single wall mechanical tubing and a double wall, or composite unit, made from two thinner tubes. It is produced in an annealed condition and in ½ hard temper, and to mechanical properties specified by the customer. All Superior pressure tubing is 100% hydrostatically tested to recommended working pressures, and rigidly inspected for defects.

We can probably help you with any tubing problem that may confront you . . . in pressure, super-pressure or other applications. Contact us and feel no obligation. Superior Tube Company, 2034 Germantown Ave., Norristown, Pa.

Superior Tube

The big name in small tubing NORRISTOWN, PA.

All analyses .010 in. to 3/8 in. OD-certain analyses in light walls up to 21/2 in. OD

West Coast: Pacific Tube Company, Los Angeles, California . FIRST STEEL TUBE MILL IN THE WEST

For More Information Write No. 194 on Place Mark Card-Page 32

HAVE YOU TAKEN SIDES IN THE BELT DRIVE REVOLUTION?

The change from Multi-V to Multi-Wedge is revolutionizing belt drives. A simple change in shape gives the Wedge Belt greater efficiency. Thus the number of belts can be less, diameters can be reduced 30 to 50% and center distances cut 20% for the same transmitted horse-power. In fact, Multi-Wedge drives result in initial savings up to 20%.

Because of this potential saving, it's to industry's advantage to design Wedge-Belts into new equipment as soon as convenient. But Worthington will supply complete requirements in both Multi-V and Multi-Wedge drives until the latter has completely taken over.

Are you worried about interchangeability of brands? Frankly, five out of the eight leading drive manufacturers now offer Multi-Wedge, as well as the Multi-V drives.

And so far, all Multi-Wedge drives are offered in the same belt and sheave sizes.

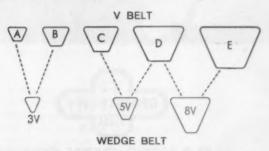
There is, however, an important reason for preferring the Worthington Multi-Wedge drive. Worthington makes the QD (Quick Detachable) sheave—the industry's largest seller—in the complete range of Multi-Wedge standardized dimensions. This sheave, with its two Golden Screws, appeals to plant operators because of its positive locking arrangement—easy on ... easy off... always tight.

For Multi-Wedge drives, Worthington maintains a large stock of its QD sheaves and Worthington-Goodyear Wedge belts from coast to coast. For information call your Worthington distributor listed under "compressors" in the yellow pages. Or write Worthington Corporation, Section 79-28, Oil City, Pennsylvania.

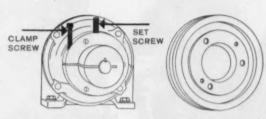




The cord layer near the top of either belt carries the load. This layer is, however, only efficient in the portion supported by side walls (red areas). Because more of its top section is over the side walls, the Wedge belt is more efficient than a V belt.



Because the smaller Wedge belt does more work, the number of sizes have been reduced without loss of flexibility. The new Wedge belts are available in three standard sections: 3V, 5V and 8V. Stock 3V and 5V sheaves cover horsepower ranges through 200 hp. Made to order 8V sheaves will be used for 200 to 2,000 hp. requirements.



Worthington QD sheaves are preferable for Multi-Wedge drives, The clamp screw simplifies installation, assures permanent alignment, and makes it possible to use a set screw without causing hub distortion that might cause eccentric runout. The set screw prevents "key drift" by locking the key securely in place. You install QD sheaves easily—one part at a time. If change in speed is required, you simply install another sheave on the hub which remains anchored to the shaft.



"WE'RE GOING TO BLOW IN 43% MORE PIG IRON CAPACITY TO MAKE MORE GRANITE CITY STEEL"



"This is Granite City's new blast furnace. We're building the shell and much of the superstructure off-site. Then, when the old furnace is torn down, we'll move this 650-ton shell into place. This will save about two months' down time. The new blast furnace will have twice the capacity of the one it's replacing. When it is blown in, it will boost our annual pig iron capacity to 1,100,000 tons—provide more of the hot metal we need to support our increasing ingot capacity. This is another way Granite City Steel is growing—assuring you a dependable source for steel."



GRANITE CITY STEEL

STEELMAKERS TO MIDDLE AMERICA

HOME OFFICE: Granite City, Illinois • SALES OFFICES: Dallas • Memphis Kansas City • St. Louis • Minneapolis • Houston • Moline • Tulsa



Purchasing People In The News

B. A. Warren has been named general manager of the purchasing department of Esso Standard, division of Humble Oil & Refining Company, N.Y. Mr. Warren succeeds Haylett O'Neill, Jr., who



B. A. Warren

returns to his permanent assignment as purchasing agent of the Humble division in Houston. Mr. Warren was assistant general manager of purchasing for Esso in N.Y. before moving to Houston as a temporary purchasing agent.

He has always worked in purchasing operations, since he joined Esso at its New York City headquarters 37 years ago. He was named assistant general manager of the purchasing department in 1954. During World War II he served with the Petroleum Administration for War, on loan from Esso, and also with the foreign steel subcommittee of the National Petroleum Council.

Two promotions were announced at United Electric Controls Co., Watertown, Mass. Robert Rando has been promoted to the newly-created position of director of materials and production. Myron S. Tutunjian has been made purchasing agent. Mr. Rando was purchasing agent for temperature and pressure controls prior to his promotion. He is a graduate of Bentley School of Accounting and Finance, and received his degree

in business administration from Northeastern University. Mr. Tutunjian has been a purchasing expeditor with the firm prior to his promotion to purchasing agent.

George L. Faistenhammer has been made manager of the purchasing administration department in Ford Motor Company's central purchasing office at Dearborn, Mich. Mr. Faistenhammer has been employed in the central purchasing office since he joined the company in 1951. He has been supervisor of the administrative services and budget section of the purchasing administration department since 1955. He is a graduate of Cornell University, Ithaca, N. Y., with both A.B. and master's degrees.

Walter Rammler has been named manager of purchasing of American Bosch Division, American Bosch Arma Corporation, Springfield, Mass. Before this present appointment, he was assistant manager of purchasing at the Arma Division. Mr. Rammler joined the corporation in 1950



Walter Rammler

where he served in various supervisory positions within the purchasing department. He is a member of the National Association of Purchasing Agents.

F. Stan Romanse has been appointed purchasing agent of the boiler division of Babcock & Wilcox Company, Barberton, Ohio. In his new position he will be responsible for all purchasing activities affecting Babcock & Wilcox manufacturing facilities throughout the United States. Mr. Romanse joined the company in 1927 at the former Bayonne,

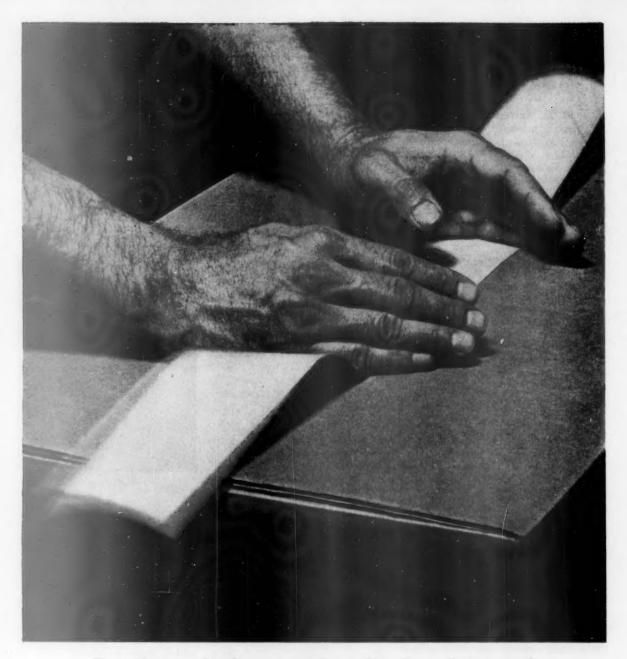


F. Stan Romanse

N.J. plant. For the past fifteen years, he has been assistant purchasing agent of the boiler division with headquarters in New York. Currently national director of the Purchasing Agents Association of New York, he has also served as president (1959-1960) and is active on numerous committees.

James A. Carvis has been promoted from assistant buyer to buyer in the purchasing department of the packaging materials division of Abbott Laboratories, Chicago, Ill. Mr. Carvis joined Abbott in 1948. He is a graduate of Lake Forest College and served in both World War II and the Korean War.

SEE PAGE 292 FOR MORE PURCHASING PEOPLE IN THE NEWS



For the seal of approval... Sterling Supreme!

Sterling Supreme gummed sealing tape truly puts the "seal of approval" and quality on every packaging job. That's because Sterling Supreme gives you everything you want for the broadest range of carton sealing requirements. Its rugged strength and instant-bonding adhesive give you a tape that grips like iron, and resists scuffing at all carton weak points. In addition, Flexoning® provides "built-in" pliability to seal more cartons faster than ever before. Sterling Supreme is available in a full range of weights, lengths, widths and

colors, plain or printed.

Remember Trojan Imperial gummed tape, too. It's a companion product with the kind of quality standards you can always expect from any Trojan tape. Regardless of your choice, you can be sure of fresh stock, prompt delivery and top-notch performance.

Ask your paper merchant for your sample rolls of Sterling or Trojan . . . do it today!

The Gummed Products Company

Troy, Ohio · A Division of St. Regis Paper Company

For More Information Write No. 197 on Place Mark Card-Page 32



The Efficiency of Your Cleaning Operation Is of Much More Importance

Detrex Perm-a-clor is universally recognized as a premium grade solvent, selling at regular price. There is none better.

Buying from questionable sources or the use of unproved solvent can result in an inferior finishing operation which actually costs money instead of saving it.

One sure way to save real money on trichlorethylene is through an expert engineering analysis of the overall degreasing operation—your equipment, your methods, the proper instruction of your people.

Detrex engineers have been making such operational studies for more than 30 years. In many, many instances they have set up a program that has reduced solvent consumption by 15% to 25%. They would like to help you.

"How to Get the Selvent Degr

Depend on DETREX for Every Metal Cleaning

Solvent Degressers
 Ultrasonic Equipment
 Industrial Washer
 Phosphate Coating Compounds
 PAINTBOND Compounds

rAINTBOND Compounds
 Aluminum Treating Compounds
 Alkalı and Emulsion Cleaners
 Rustproofing Materials
 Extrusion and Drawing Compounds
 Spray Booth Compounds

and Processing Need

 PERM-A-CLOR NA (Trichlorethylene)
 Solvent Description

DETREX

CHEMICAL INDUSTRIES, INC.

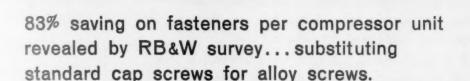
Box 501, Dept. P-1060, Detroit 32, Michigan

World's Largest Exclusive Producer of Cleaning Chemicals and Equipment

For More Information Write No. 198 on Place Mark Card-Page 32



This 3 screw cuts costs \$24



This was no case of cutting corners on fastener quality. Nor was it in any way a compromise with good engineering. It was rather a reflection of the ability of the RB&W Fastener Man to look realistically at a product, and its blueprint specifications, and know what fasteners can best do the job.

His inspection showed that alloy socket head cap screws were being used for external connections which did not require such costly steel for tight joints. Nor were they installed in tight spots or recessed holes. Why then waste their cost? His report recommended switching to bright cap screws. Sufficient joint strength would be obtained. But instead of spending \$28.88 for 147 socket screws, the unit would take \$4.88 worth of cap screws...a saving of \$24 per unit, and pure profit!

Want to be sure you're avoiding needless costs in fastener usage, and getting the most from your fastener dollars? Ask an RB&W man to make a survey. No obligation. Contact Russell, Burdsall & Ward Bolt and Nut Company, Port Chester, N. Y.



Plants at: Part Chester, N. Y.; Caraopolis, Pa.; Rock Falls, Ill.; Los Angeles, Calif. Additional sales offices at: Ardmare (Phila), Pa.; Pittsburgh; Detroit; Chicago; Dallas; San Francisco. Sales agents at: Cleveland, Milwaukee; New Orleans; Denver, Farge. Distributors from coast to coest.

For More Information about ad on facing page
Write No. 200 on Place Mark Card—pg. 32→
PURCHASING



"One call for all" describes the kind of versatility that makes buying from H & H a pleasure. One call, one order, and even one invoice if you wish it, is the expeditious, truly economical way to handle your brass

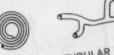
and copper tubing purchases. And when the parts, coils and straight lengths you buy are all H & H products, responsibility for quality is not only fixed, but assured. So place that "one call for all" to H & H, today.

HAH TUBE AND MANUFACTURING CO.

271 North Forman Avenue, Detroit 17, Michigan . Offices from Coast to Coast







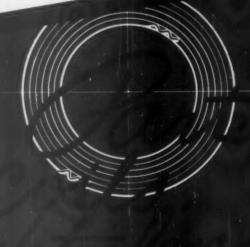
SEAMLESS

COIL STRIP LOCKSEAM

STRAIGHT AND COILED TUBE

TUBULAR PARTS





RUSH JOB ON FLAME CUTTING?



Phone your Airco Distributor...

He goes out of his way to make that special delivery

You can't make the deadline if you lack gases, equipment or supplies to do the job. So why take a chance? Call your Airco Distributor. He'll break all records to see that you get all that you need when you need it. His service and practical know how are backed up with Airco's years of welding experience.

For high production or high precision,

For high production or high precision, choose from the AIRCO quality line of gas cutting and welding equipment — flame cutting machines—arc welding equipment and arc welders—gas-shielded arc welding process equipment — high purity and rare industrial gases—electrodes—supplies and accessories.

Call your nearby Airco Distributor. He's listed in your Classified Telephone Directory under "Welding Equipment and Supplies."

AIR REDUCTION

700 Authorized
Airco Distributors
from Coast to Coast

For More Information Write No. 156 on Place Mard Card—Page 32

FOB-"filosofy of buying"

Some P.A.'s, says E. A. Pichotte, assistant director of purchases for Milprint, Inc., often lose sight of an important point in their willingness to save money for their employers. "We do not realize," he writes, "what long range economic problems are being forced on us by constant under-pricing of American products by imported products."

Mr. Pichotte sent us a copy of an item called "I Am An Importer," which is too lengthy to reproduce here in its entirety. Part of it reads:

"I've really only one thing to offer-price. I've nothing else to sell against my competition (your long-time domestic suppliers). They're paying their employees (who are also your customers!) five or six times as much as my foreign sources pay theirs . . . You can bet your life (or your business!) that we are not going to raise our employees to an equal economic footing with my domestic competitors' workers. Never! Then I couldn't under price him, and with nothing to really sell. I'd be sunk.

"Don't look for me if you come upon hard times . . . I'm offering only price—not reliability, reputation, or the willingness to see you through thick or thin."

Mr. Pichotte will be glad to provide copies of the full text to interested readers.

VISITORS to New York in recent weeks may have suspected a major purchasing scandal was brewing. The local papers were full of such headlines as "Congressman Demands Probe of P.A.," "P.A. Refuses to Permit Inspection of Records," "May Hold P.A. In Contempt of Congress."

Fortunately—for us, anyway—the P.A. who is in all this hot water isn't a P.A. at all. It's the Port of New York Authority, known popularly around these parts as the Port Authority (also, for some peculiar reason, Port of Authority.) Congressman Emmanuel Celler of Brooklyn was, for reasons not fully explained, trying to have certain records of



"I'm not up to anything, watchman, I just wanted to see how it felt to sit here without phones ringing and a dozen people to see me."

the Port Authority made public. The Port Authority refused to reveal any of its secrets, and Celler began to threaten it with legal action. The squabble was big news around the city, and the newspaper headline writers naturally gave the P.A. plenty of publicity.

VERY YEAR we ask thousands of purchasing agents to help us in our Purchasing Opinion Poll and other surveys. The information we get in these survevs is used only in combined form and we never reveal a respondent's name or company without his permission. Nevertheless. an occasional reader will cut his name and address off the ballot before returning it. We received one such the other day and didn't think much about it until we realized that next to the cutout portion was the notation "#254336." Now we're wondering whether the ballot fell into the hands of a jail inmate, or whether some of our bigger companies are numbering their employees. On the other hand, it may be some sarcastic P.A. that feels he's in some kind of an institution and might as well have a number.

T PROBABLY won't become a campaign issue this fall, but there's a new type of housing discrimination being practiced in this country. Previews, Inc., The Nationwide Marketing Service, recently advertised a group of homes on "a newly discovered island." After a few paragraphs of real cozy copy, Previews bluntly informed readers that not everyone would be eligible for the club membership that goes with the purchase of a house. "You must come fully equipped with an alert I.Q. and a lively sense of humor," according to the agency.

Well, that eliminates at least one objectionable character. Anyone who describes an I.Q. as "alert," hasn't any.



Make NEWARK your source of supply for Wire Cloth and Wire Cloth Products. We weave all of our own cloth from which we fabricate parts for our customers...thus insuring both quality of cloth and accuracy of construction.

Newark Wire Cloth is available in all standard widths, all meshes, all commercial metals...the Newark line is a complete line even up to 400 mesh cloth. And if your problem is one of parts design, our engineers will be glad to aid. May we quote on your requirements?



COMPANY

351 VERONA AVENUE

NEWARK 4, NEW JERSEY

For More Information Write No. 157 on Place Mark Card-Page 32

Whatever turn shafts may take...

it's easy to match your needs from LINK-BELT's complete line of self-aligning ball and roller bearings

High speeds, low speeds-light loads, heavy shock loads, there's a Link-Belt bearing to keep every shaft turning continuously and economically.

Link-Belt's line of ball and roller bearings, the most complete in industry, includes spherical roller bearings, pillow blocks, and flanged, flanged cartridge, cartridge and takeup blocks. All have industry's preferred bearing features and all have won the reputation of "the designers' choice."

Link-Belt self-aligning ball and roller bearings compensate for inaccuracies in fabrication and assembly of equipment while maintaining full load capacity throughout their long life. Their compactness promotes simplicity of machinery design-their easy mounting reduces installation costs.

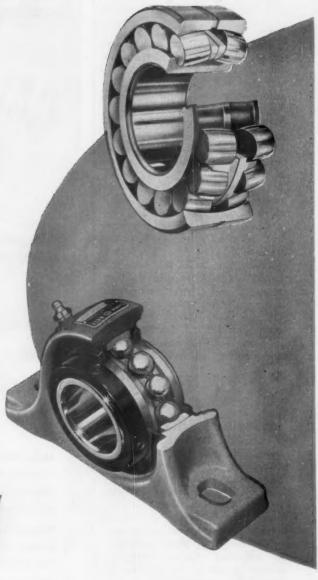
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ROLLER BEARINGS WITH SOLID HOUSINGS employ heavy-duty, double-row self-aligning roller bearings. Available with cast iron or cast steel housings. Choice of seals to match operating conditions. Compact, rugged and easy to install. Series 400, for 34" to 4" shafts.



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CARTRIDGE BLOCKS



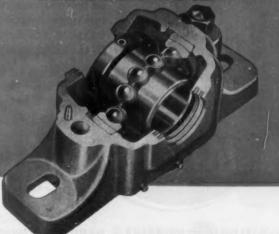


TAKEUP

BALL BEARINGS WITH PRESSED STEEL HOUSINGS come completely assembled, ready to install. These low cost, dependable pillow blocks have self-aligning bearings to compensate for mounting inaccuracies. Spring locking collars assure tight fit on shafts. Lubricated for life, these bearings require no maintenance. Series JPS-20), for ½" to 1½"

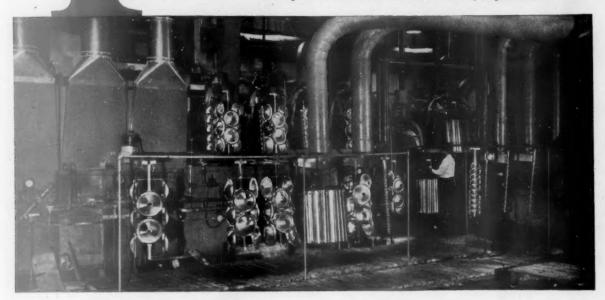






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In Purchasing...



IT'S the little things that count in this life. When we started our Purchasing Pointers column at the start of this year, we had a few doubts that it would attract much attention. But we went ahead anyway and in a few months found that our

audience for that feature was growing. Our readership studies have shown that Pointers is now one of our most popular sections. The clincher came a few weeks ago when one of the keenest purchasing executives in the business told me he never misses it. "I can't begin to tell you how many things it has reminded me to do or change in my department," he said. "It's a great help to all of us."

So it looks as though Purchasing Pointers has a permanent home. If you're one of the very, very few who haven't been benefiting from capsules of practical purchasing advice, start now on page 67. And if you're a faithful reader why not try your hand at a pointer or two? You'll get the satisfaction of helping your fellow purchasing executives along with a check for \$5 for each item that appears in print.

If management asked you tomorrow whether you thought materials management was any good, or if you could suggest a materials program for your company could you do it? Something like that happened to the purchasing agent for a West Coast electric/electronics company about 12 months ago. What he thought about it and did about it makes another one of our interesting and practical articles on materials management. Read it beginning on page 70.

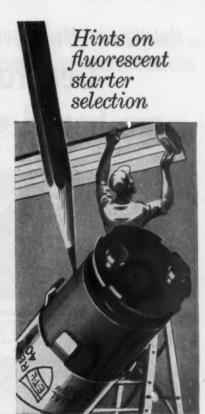


There's a cluster of short articles on several different aspects of value analysis, beginning on page 89. Dr. Dean Ammer, our economist-purchasing agent turned editor, leads off with a pene-

trating piece on one of the basic steps in value analysis—price analysis. The other articles deal in turn with the value of a value consulting program; the team approach to value analysis in a medium-sized company; and a supplier's contribution to a customer's value analysis program.

Plenty of other usable information on purchasing and all its ramifications is yours just for leafing through the magazine. To get to it even faster check the Table of Contents on Page 5. And be sure not to miss the expert rundown on business conditions in the Pulse of Business (page 7). This feature, incidentally, has been getting a lot of attention lately on the business pages of the country's newspapers.

Ray Richards Publisher



G-E STARTERS GIVE YOU SPECIAL PROTECTION AGAINST SHOCKS

General Electric puts insulating liners in its fluorescent starters, to protect maintenance people against the slightest chance of a shock. The liners prevent inside elements from touching and charging the outside metal can — a possibility in unlined starters if they are mistreated or dropped.

For extra safety — use G-E starters. And to get helpful starter ideas, ask your G-E distributor for

the "G-E Starter Selection Chart and Maintenance Guide for Fluorescent Lighting." General Electric Company, Wiring Device Department, Providence 7, R. I.



GENERAL @ ELECTRIC

For More Information Write No. 158 on Place Mark Card—Page 32 Metallurgical Memo from General Electric

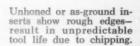
General Electric announces pre-honed CARBOLOY inserts



Hand-honing is inaccurate, and time-consuming-frequently results in premature chipping and breaking.



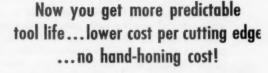
Chamfered, or ground-flat, edges are geometrically weaker than a radius and are more easily chipped or broken.







Shown here, both under magnification and graphically, is an edge of the new Carboloy pre-honed insert. Radius is geometrically ideal to minimize chipping, extend tool life many times.



Ready-to-use...honed to a precise radius...promise BETTER PROFITS THROUGH BETTER TOOLING

Now General Electric Carboloy inserts are pre-honed at the factory! Here's what it means to you:

1. An insert with edges honed to precise radii gives the strongest geometric shape to withstand cutting pressures. This reduces chipping – increases the predictability of tool life. Hand honing cannot achieve precise radii – G-E pre-honing can . . . and does!

2. Since chipping is minimized, fewer cutting edges are wasted. The result is lower cost per cutting edge.

3. Since inserts come pre-honed and ready-to-use, the labor cost of hand honing is eliminated. This more than offsets the charge for pre-honing.

4. Pre-honed Carboloy cemented carbide inserts have standard edge radii honed to a greater or lesser degree, depending on the job to be done. You'll know the honing is right!

Ask your Authorized Carboloy Distributor about pre-honed Carboloy inserts, convertible seats, tool-holders, and brazed tools. Or, write: Metallurgical Products Department of General Electric Company, 11143 E. 8 Mile Road, Detroit 32, Michigan.

TOPS IN TOOLING QUALITY

From the research and quality-control facilities of the Metallurgical Products Department of General Electric comes the outstanding quality tooling line in the metalworking industry. The new Carboloy pre-honed inserts, as well as the complete line of Carboloy toolholders, inserts, insert seats, convertible seats, and brazed tooling, are designed to meet every tooling need efficiently and economically.

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CEMENTED CARBIDES

METALLURGICAL PRODUCTS DEPARTMENT

GENERAL & ELECTRIC

CARBOLOY® CEMENTED CARBIDES

MAN-MADE DIAMONDS - MAGNETIC MATERIALS
THERMISTORS - THYRITE® - VACUUM-MELTED ALLOYS

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- DEFECTIVE MATERIAL RETURNS—General Electric's Small Aircraft Engine Dept.

 includes a charge-back for boxing and packing (in addition to shipping charges) when it returns defective material. This is the policy outlined in a form letter that goes to suppliers:

 A 10% fee based on the dollar value of the defective material up to and including a maximum of \$5.00; no boxing and packing charges on forgings, castings, and raw stock, or when responsibility for the return remains with G.E.; defective material will be shipped F.O.B. the G.E. plant in Lynn, Mass.
- BUYING BY SHORT-WAVE RADIO—One company with a large volume of small local purchases has found that it pays to have the company truck equipped with a short-wave radio. This makes it possible for purchasing to put through a call for a rush pickup if the truck happens to be out when an emergency requisition is received.
- LEASE OR BUY TRUCKS?—A comparative analysis of truck fleet leasing plans and company ownership of truck fleets has been published by the Foundation for Management Research, 121 West Adams

 Street, Chicago 3, Ill. Although it probably can be considered a bit of special pleading for leasing, the study has some interesting figures for P.A.'s involved in lease-or-buy decisions.
- SPEED FIRST CLASS MAIL—If you are mailing material in large-size envelopes at first-class rates you can be sure you're getting the service you're paying for by using a special envelope made by United States Envelope Co. and others. It has a green diamond border as a sign to the postoffice that it contains a first class mailing. The border is recognized by the postoffice and officially encouraged to speed sorting and prevent mistakes, since most large-size mailings are sent at lower rates and do not move as fast as first-class mail.
- ARE YOU MISSING DISCOUNTS?-You never get something you don't ask for.

 A western P.A. had this statement printed on his purchase order: "Discount—Invoices lacking terms will be discounted 2%-10 basis and all discounts will be calculated from the date acceptable invoice is received by buyer, after receipt of merchandise." The vendor is not legally bound to give the discount if his statement says "Net", of course. But, the P.A. says, his experience shows it's worth the effort to make the try.
- WHO'S WHO AT YOUR SUPPLIERS—Buyers at a midwestern firm with hundreds of suppliers can call directly to any of several executives at vendors' plants in an emergency. A simple 4x5 card "Vendor Personnel Record" file gives them needed information quickly.

 Each card lists the vendor's name, address, and telephone number; names of all executives from president down to factory manager; local representative's name, address and telephone number. On the reverse side is a record of the dollar volume of orders issued to the vendor.



What's the lowest cost way to produce steel parts like these?

No matter what size the part, or how intricate, Ryerson flame-cutting service may save you money over cast or forged parts. And you get quick delivery of one part or a thousand, cut to close tolerance—with almost diecut accuracy.

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- Less time in process—convert products into cash quicker.
- 5. No loss on rejects.
- 6. Design changes are simpler, less expensive.

A blueprint or sketch with clearly marked dimensions is all we need for prompt handling of your flame-cutting requirements. Heliarc cutting of stainless also available on request. Call your nearby Ryerson plant for cost-cutting, flame-cut steel today.



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Time for Depreciation Reform

Purchasing Magazine October 10, 1960 THE EFFECTS of inadequate depreciation rates are brought home forcefully to the purchasing executive in two ways. He has personal knowledge of what they can do not only to his company's costs and competitive position but to his suppliers'.

The P.A. responsible for buying equipment comes up against two built-in bugaboos that are not given proper consideration under our present tax laws governing depreciation: rapid obsolescence and continuing inflation. A machine tool bought in the past few years is very likely to be outmoded in the next two. True, it may run beautifully for 15 or 20 years. But in fact by next year it may simply be incapable of turning out the volume or quality of product customers will be demanding. Many of the P.A.'s suppliers are in the same boat, as he can readily see when it comes time to negotiate a contract.

In the race to stay competitive, industry has to expand and modernize. But the allowances permitted under present tax laws don't provide industry with the money it needs to replace worn out or obsolete machinery. Economists of the Machinery and Allied Products Institute estimate that costs of replacement are outrunning depreciation allowances in American industry by \$6 billion to \$8 billion a year.

One of the more ironic aspects of the situation is that liberal depreciation allowances in European countries have enabled manufacturers there to take business away from U. S. suppliers. A recent study by the First National City Bank of New York covering tax allowances for depreciation on machinery and equipment in industrialized Europe makes U. S. allowances stand out as being particularly restrictive.

"This stringency," says the bank, "is a matter of increasing national concern as American producers are confronted with increasing competition from foreign manufacturers who can now combine cheaper wage costs and easier income tax rates with faster tax write-offs on the most modern machinery."

Purchasing agents who have been buying abroad would do well to ponder the advantage foreign producers get from this difference in taxes. As a matter of sound business, they should be anxious to promote the same industrial growth here that has made European industry so competitive. After all, whatever advantage is gained by buying abroad will soon be lost if domestic suppliers are forced out of the market.

To promote their own companies' welfare and to further competition among suppliers, industrial purchasing agents should support industry's current campaign to obtain greater allowances for depreciation of capital assets.

Paul V. Farrell

Materials Management Gives the Answers

With only 15% of its business on firm commitment and the rest on option, Lenkurt Electric constantly faced shortages or high inventories. It sought a solution by switching from conventional purchasing to an unusual materials system. The answer came in the form of reduced shortages, doubled inventory turnover.

By Paul V. Farrell,

THE STORY of materials management at Lenkurt Electric Company reads like a classic textbook case study. But there are no "school solutions" or alternative answers in the Lenkurt Case. Experience has provided the only answer: a materials program that has cut down shortages, reduced inventory, and boosted stock turnover from 3 to about 7 turns a year.

Lenkurt is a subsidiary of General Telephone and Electronics Corp. Its principal products are multiplex systems-the electronic equipment used to send many long-distance telephone and telegraph messages simultaneously over a wire-line, cable or radio circuit. About 15% of the company's business is "firm," about 85% on options. This obviously calls for very careful planning on materials, and tight control of inventory to prevent obsolescence. Of the 6,000 items Lenkurt buys, 8% are responsible for 60% of the dollar volume. These are the Class A or "walk-in" items shown in Chart I.

Using the conventional purchasing system, the company was plagued with stockouts on one hand, and unnecessarily high inventories on the other. Lenkurt, like every other firm, wanted to strike a balance between tying up too much capital in inventory and risking production delays

that result from material shortages. But the balance was difficult to achieve in practice. Stock turned over only a few times a year and shortages continued.

Management decided that some change in the materials set-up was needed and called for proposals. Among them was Purchasing Manager Dave Steinberg's suggestion that Lenkurt go to a materials management system. He proposed that all functions concerned with the acquisition, handling and storage of raw materials be placed under a manager of materials. His department would cover buying, inventory control, traffic and stores (including receiving.) Included in the buying group would be material planners who would initiate requisitions for production materials based on production plans and established inventory levels.

Steinberg disclaimed any attempt to build an empire. "What we want to do," he said, "is to get maximum mileage out of the money, people, and equipment used for the acquisition and control of materials." This he said, was what the system would do for Lenkurt:

 Reduce the number of people needed to handle materials and eliminate overlapping of record-keeping and clerical work;

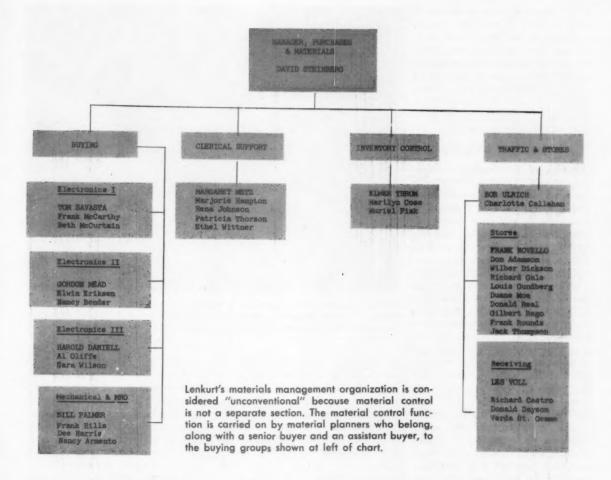
• Eliminate "buck-passing" on

materials problems by defining and centralizing materials responsibility:

- Improve vendor relations by establishing delivery schedules on the basis of complete and up-to-the-minute knowledge of inventory levels and production requirements; Eliminate "peak and valley" requirements, frequent re-scheduling of open orders, and permanent short-lead-time ordering:
- Assure materials availability and prevent emergencies by com-



Manager of Purchases and Materials Dave Steinberg developed Lenkurt's materials management organization.



bining knowledge of vendors' capabilities with inventory position and production requirements;

 Obtain a better balance between cost of acquisition and cost of possession and improve inventory turnover by coordinating "what the buyer knows" and "what the materials planner knows."

The Basic Argument

In most cases, these views would be opposed by other departments in a company. Material control is generally a responsibility of the production control department. Inventory control has been moved over to purchasing in many companies, but often in face of strong opposition from various manufacturing departments. Production control people feel, with some justification in certain circumstances, that inventory control is logically production control's responsibility, since changes in stock

levels are derived from sales forecasts and production schedules.

The problem at Lenkurt, however, was worked out not on the basis of "what's in it for me," but "what's best for the company." When the arguments were complete it was up to management to decide whether a materials management organization that integrated buying, material control, and inventory control would be most logical for Lenkurt.

What would be your solution to the Lenkurt Case?

Lenkurt management's answer was to accept the materials management program proposed by Dave Steinberg. In January of this year, Steinberg was made manager of purchases and materials with a completely re-aligned materials organization.

The old purchasing department had only the buying and traffic functions. The new materials unit includes buying, inventory control, traffic, stores, and receiving. (See chart.) The buying section is divided into four vertical groups, each with a buyer, material planner, and expediter (who, in some cases, acts as an assistant buyer.) Each group has a definite list of categories and is responsible for the management of materials assigned to it.

Lenkurt's solution to its own case is apparently the right one. Within a few months the company was embarked on its longest and most effective planned reduction of inventory. In the first month, inventory decreased by \$69,000; in the second month, \$103,000; in the third month by \$191,000. At the end of the fourth month, inventory had been cut by a quarter of a million dollars. This was no fluke. The inventory reductions took place during a period of high activity, when work-in-process inventories were on the way up. Stock now turns over 7 times a year as compared with 3 times a year previously.

Shortages and delays are at an all-time low for Lenkurt. What delays do occur are generally caused by suppliers failing to ship in accordance with schedules. Delays caused by integral foulups and poor communication have been practically eliminated.

Fewer People, More Work

Although purchasing volume has steadily increased—not only in terms of dollars, but in products—Steinberg hasn't found it necessary to add new people. A great deal of duplication, particularly in filing has been eliminated.

One of the biggest benefits—and most surprising, at first glance—is the improved morale of the people involved. "When you first look at a problem like this, you think in terms of mathematics" says Steinberg. "You try to balance cost of acquisition and cost of possession—and what is that but working with numbers? But the catch is that you have to bring people together first and then work on the mathematics."

"We have found," he adds, "that we have developed a personal interest among our team members through the materials management approach. The buyer and planner, for example, realize they must work together



Steinberg's organization even has a "manufacturing" unit as part of the stores section. Wire is bought in large rolls then stripped and clipped into short pieces on these machines before being issued.

in managing materials. One is not thinking in terms of bargains while the other thinks in terms of protecting his stock position. They are working together for what is best for the company. And that attitude—intangible as it is compared to mathematics—helps them to reconcile their points of view."

Steinberg's organization has another built-in morale factor:

material control personnel here in direct line for promotion into buying positions. The specialized knowledge of materials and requirements of a material planner—plus his daily contact with buyers and their operations—makes him a natural for filling buying positions as they open up.

Even the stockroom chief feels a new sense of belonging under the materials management system. "Now I know I'm part of a team, and I like it," he says.

Steinberg helps promote the team feeling—and team performance—with regular weekly 9.30 a.m. meetings. Everyone in the department except the stock clerk attends the meetings and, as Steinberg puts it, "gets the latest dope on what we're doing, as a company and as a materials management group. We'll talk about new orders, shipments, targets, promotions, special recognition for outstanding work, etc."

The meeting also gives Steinberg a chance to promote a pet project: a low-pressure, small-scale departmental training course. Some member of the organization will speak for five minutes on a specific purchasing subject—print changes, purchase order errors and omissions, how to use vendor inventories, and



Physical layout of purchasing department was changed to fit materials management concept. Each planning-buying team has its own office unit.

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so on. "This 'capsule course' in purchasing fundamentals is just another way to improve our performance and develop the team spirit in one pass," he says.

Steinberg, who has an electrical engineering background, is as enthusiastic about materials management as he is about his adopted state. (Steinberg joined Lenkurt in San Carlos, Calif. a few years ago after living and working in New York.)

"If you have a good man who has a good grasp of the materials situation—the relationship of materials requirements, inventory, traffic, purchasing, and vendor capabilities—this set-up is a natural," he says. "And in the medium-sized company you just can't lose with it. There's just too much to gain in better departmental relationships, lower inventories, and reduced costs."



Central catalog file and library is conveniently located adjacent to buying group offices.

► END

A Shortcut to

MRO Field Control

ADOPTION of a simple, lowcost system of portable inventory and purchase record files by the San Francisco Housing Authority has proved to be the solution to a tricky purchasing problem.

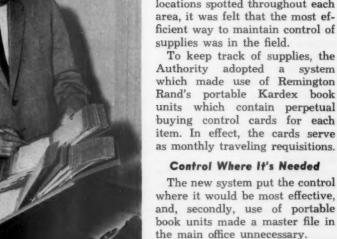
The Authority is responsible for the maintenance of all lowrent housing properties in its area. For the Authority purchasing department this means spending \$2 million annually for M.R.O. items such as plumbing, carpentry, electrical repairs and structural work. The number of routine items purchased, ranging

from light bulbs to water faucets, nails and plywood, totals about

To handle this huge maintenance job efficiently, the Housing Authority decided it would have to keep a 90-day inventory of most of the commonly used materials. It also realized that it would have to have a sound records and control system that would keep account of stocks, be an aid in reordering, show price trends, and still be simple and inexpensive to operate.

Because the San Francisco housing area that the Authority is responsible for is divided into two major sections with storage locations spotted throughout each area, it was felt that the most efficient way to maintain control of

To keep track of supplies, the Authority adopted a system which made use of Remington Rand's portable Kardex book units which contain perpetual buying control cards for each item. In effect, the cards serve as monthly traveling requisitions.



There is a separate book for each class of item, such as building, electrical, plumbing, janitorial materials, etc. Each book holds approximately 125 cards - each card represents a buying control and combination traveling requi-



Purchasing Agent Frank Zerga, San Francisco Housing Authority, has five days in which to replenish stocks for 2000 MRO items. Use of Kardex book units has helped him simplify this difficult task.

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sition for individual items.

In addition to standard purchasing information, each card also has a description of the item it covers. This helps to keep specification mistakes to a minimum.

Once a month (between the 1st and 5th) the material control clerk for each housing area determines what materials are to be ordered. The quantity is entered on the card and a movable signal at the bottom of the card is placed in the "to be ordered position."

On the 5th of the month, all the Kardex books are turned over to Purchasing Agent Frank J. Zerga. Within the next five days Zerga and his staff must order all the flagged items.

Aside from making out the purchase order, all purchasing does is to enter the date the order was placed on the card. Two copies of

the purchase order are sent to the field office, one to finance and another is held for purchasing's

After all flagged items in the books have been ordered, the books are returned to the field offices (no later than the 11th of the month). This is essential because the same card is used to record receiving information.

How to Handle Emergencies

Deliveries are, of course, made to the appropriate storage locations in the field area. After the material is received a copy of the purchase order is signed and forwarded to the finance department. There, it is matched with the copy already on hand and payment made.

To handle emergency and seasonal requirements, a form similar to the buying control card is used. These forms are in pads and come in two colors. A white form is used for purchases of single items, yellow for orders covering more than one item or for nonroutine jobs and one-time purchases.

When an item is needed, a paper copy of the form is sent to purchasing and a duplicate on card stock is placed in the book unit for cost control purposes.

This is what John W. Beard, executive director of the San Francisco Housing Authority says about the new purchasing system, "With this system we have been able to reduce the amount of paperwork and filing that purchasing formerly had to do. In addition, it has eliminated the possibility of transcription errors, and has given the Authority a sound inventory control program."

► END

Top Flight Purchasing Earns Recognition at the Top

Recognition comes to those who earn it. Outstanding cost reduction performance earned a spot on the executive committee for the P. A. of medium-sized Metalab Equipment Co.

By John Van de Water, Technical Editor

PURCHASING AGENT Kenneth Stanjones is only 30 years old, yet he is a part of top management. At the Metalab Equipment Co., Hicksville, N.Y., he reports directly to the executive-vice-president and is a member of the executive committee, a group which includes the company president, controller, plant superintendent, and v.p.'s of sales, engineering and research.

Stanjones is in this enviable position because he spends more than one-third of the company's annual sales of almost \$13 million, and because his six-man department is one of the main instruments of controlling costs in a highly competitive business. Metalab makes scientific laboratory

equipment and furniture, a field that has seen fantastic growth in the last decade. The company is only 16 years old but it employs over 800 people and is a major producer in its field.

"Cost is an important problem," Stanjones explains. "Because most of our sales are on bid, we are in a constant cost squeeze. We have to keep looking for ways to improve the quality of our equipment and spend less to do it".

To make sure that he doesn't overlook a cost reduction opportunity Stanjones reviews all requisitions daily. When usage and prices make it worthwhile, he or one of his buyers will look for ways to save. They have been most successful with:

- Material and design changes
- Frequent review of vendor and quantity
- Vendor stocking arrangements
- Field buying
- Shipping by company truck When Stanjones looks for materials or designs that will save money, he doesn't want something that merely costs less. He will look for better materials, or for products that will mean less work in the plant. That way he can save twice—once in the purchase cost, and again in plant labor.

A good example is a plastic waste chute—a device that fits into a cabinet door and leads to a receptacle inside. Until a short time ago it was made from sheet metal. That required cutting, welding, cleaning, grinding, painting. Today, Stanjones buys it as vacuum molded one-piece plastic unit ready to install.

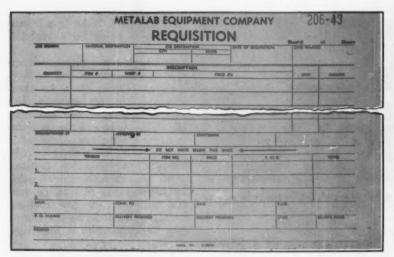
Improve the Appearance

Similar advantages resulted when cabinet door handles were changed from aluminum castings to extrusions. Certain grinding, buffing, and cleaning operations have been eliminated, and a new, modern design gives the part a solid, high-quality appearance.

When Stanjones switched from steel to nylon on drawer rollers, he did more than just cut unit costs by a few cents. The new rollers worked more smoothly, never needed lubrication, and didn't rust. "I keep looking for



P.A. Kenneth Stanjones points out two cost reduction features that improved the product as well. Plastic waste chute on laboratory cabinet replaced sheet metal part that required five operations to make. Extruded aluminum door handles look better, cost less than cast handles previously used.



Metalab requisition form is designed so that it can be filled out quickly by the buyer. At bottom of form space for quotation recap gives basic information at a glance.

Of the 10-part purchase order form, five receiving reports snap out as a unit, complete with carbons. As soon as order is typed the receiving copies go to the receiving clerk, who aistributes them when shipment is complete. This arrangement saves considerable clerical time at the receiving dock.

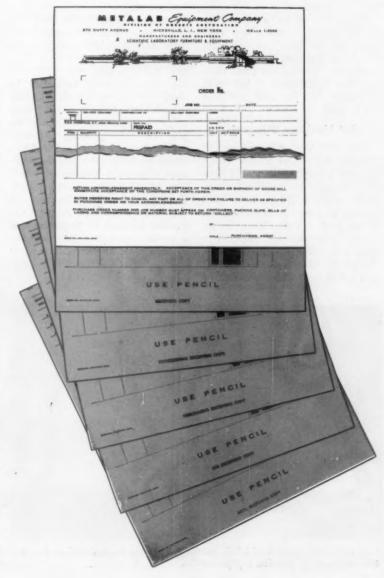
places to use plastics," he says. "They have properties that often fit the application better than the material we may be using."

Purchasing, of course, discusses any contemplated material or design changes with engineering and sales. Here is where a place on the executive committee pays off. It gives purchasing a position that is respected and a chance to make its suggestions heard. When special parts have to be bought or subcontracts let, representatives from both purchasing and engineering inspect the vendor's plant and capabilities together.

Buying Tip on Standard Parts

Because purchasing is constantly searching for better materials and lower prices, it has to find new vendors who can supply these needs. One successful approach is to find a manufacturer who is already making a special part for his standard line in high volume. If Metalab can use the part too, it can get it at a low, high-volume price that would not otherwise be available. Makers of electrical, plumbing, and gas fittings in particular are making more standard parts in volume that are designed for laboratory installations.

Company growth has helped Stanjones obtain lower prices because he can buy in larger quantities. "We are really alert to quantity changes", he asserts. "If





Purchasing saves on transportation by using Metalab's trailer trucks to pick up materials and large components.

there is a significant change, we don't merely ask the current vendor for a new price but open the item up to bids."

When the quantity per order of an electrical outlet box rose from 500 to 3000, for instance, Stanjones changed from a sand-casting to a permanent mold casting. The initial cost of the mold was high, but the unit cost was cut in half.

Get Maximum Discounts

Old, established vendors of Metalab don't have to fear being dropped without a chance. "I have great respect for vendors," Stanjones explains. "I believe purchasing and sales need each other. If we find a better source, we always give our old supplier a chance to rebid. Often there is a change in specifications so I let him quote on the new specs. We

don't give a supplier a price to meet or tell him his competitor's price, but we do explain the circumstances."

Stanjones has found that, because of the mutual benefits, vendors like stocking arrangements in particular. He describes how they work in this way: "By having vendors keep materials in stock for us, we are able to buy a sufficient quantity at one time to get a maximum discount. We are still able to keep our own stocks at minimum levels. Additional quantities are readily available from the vendor's stock." For Metalab this means getting the best quantity price without inventory costs. And it helps the vendor because he is guaranteed a certain amount of business, he doesn't have to put selling effort into each little order, and he can, in turn, place large orders on his own suppliers. If he is a manufacturer it helps his production schedule.

Purchasing has found this approach especially useful in buying high-volume items. An abrasive supplier, for instance, has agreed to carry stocks based on Metalab's orders for maximum quantities, but ships only what is needed for a month, and bills only for what he ships. A national paint manufacturer stocks paint locally. Because of this, production demands are now met on schedule and ordering costs have gone down. In addition, Stanjones is getting better paint.

A similar arrangement with a corrugated box manufacturer is especially useful because it saves a lot of storage space. The huge cartons required to ship desks and cabinets are bulky even when folded flat, and present quite a storage problem. In addition, carton prices are determined entirely by the size of the production run. These two factors usually prevent important savings, but Stanjones has escaped the dilemma with a vendor stocking agreement. Now he buys a 1000 units at once, has only 200 or 300 shipped at a time, but gets the volume price.

Use Sales Forecasts

Purchasing is in a position to negotiate agreements such as these because it determines what to put into stock and the quantity of stock materials it should buy. Stores requisitions show the quantity on hand. Purchasing decides how much to buy from sales forecasts and past usage. Some items in common use, such as pipe fittings and fasteners, are bought in standard quantities, usually determined by the discounts available. In such cases stores indicates the order quantity on its requisition. Purchasing reviews order quantities periodically to make sure they are still the most economical buy.

Requisitions for materials not carried in stock are originated by the engineering department on a job basis. If, however, purchasing sees an item repeating rather frequently, it will investi-

(Please turn to page 302)



Buyers Kenneth Foster and Edwin Feinberg have the background to buy any item required by Metalab Equipment Co.

How to Sell Supplier Salesmen

The typical pyer sees more outsiders in a working day than one of his company's salesmen. He can be a good source of sale leads if he treats his vendors right.

STAND OUTSIDE the lobby of National Standard Co., Niles, Mich., and you'll see the water tower of a neighboring plant. Unaware that this plant could use its products, National-Standard salesmen had never called—and probably never would have. Yet, the plant is a customer today because of a purchasing department vendor-relations policy.

It happened this way. The nearby plant used Swedish saw blade steel. A mill supply salesman was trying to persuade the plant to use his line of saw blades. Trouble was his prices were too high. The plant could cut its own teeth from Swedish strip steel and weld to large band saw blades.

Despairing of making a sale, the salesman remembered that National-Standard had a division somewhere that made a high quality strip steel similar to the Swedish type. Tests soon proved that it was as good or better than the foreign product—and the price was equivalent. Considering that local supply was more reliable, the company switched to National-Standard.

But, why should a supplier salesman remember another company's product—and why should he promote it with such zeal?

Jim Mogle, vice president of purchasing for National-Standard, has the answer: "Every man in our purchasing department is committed to personally explain to our vendor salesman what our company is, how it operates, and what it makes. Company and product literature is passed on to salesmen, accompanied by a friendly chat. Should new products crop up, we let our visitors know about them. When suppliers are thoroughly familiar with our needs, they can offer us improved service. In addition, they will often recommend our products and our company with confidence to their other customers in the field."

About two years ago, a supplier salesman asked if National-Standard was supplying a local manufacturer of wire springs. The company was small but it had prospects for growth. Shortly afterwards, National - Standard won a new customer—one that has been boosting orders as the months go by.

Another time, a stainless steel salesman inquired if National-Standard made a certain type of flat stainless wire. Though his own firm did not make it, one of his customers desired another sound source of supply. Mogle's interest was kindled. For some time, his company had wanted to make the item but sought a substantial buyer to launch it.

Serving as an intermediary, the supplier salesman brought his customer's purchasing agent to Niles. Specifications were discussed — and met by National Standard's research department.

(Please turn to page 306)



Jim Mogle, purchasing VP for National-Standard, tells a vendor salesman all about his company and its products. With this kind of indoctrination, it's no wonder supplier salesmen don't hesitate about recommending National-Standard products when they are out in the field.

Purchase Orders Typed Automatically

Westinghouse's Sharon works has extended its computer-run inventory control system so that it can now be used to order thousands of medium to low dollar volume items. The results are impressive, the limitations are few.

By H. G. Johnstin, Jr. and C. A. Pursley

Westinghouse Electric Corp.

PURCHASING at Westing-house's Transformer Div. in Sharon, Pa., has taken a big step toward an integrated electronic data processing system in the purchasing inventory area. For several years our inventory control system has been run on a computer. Now purchase orders are being typed automatically as an offspring of that system. The success we are having almost guarantees that we will extend the system to other related activities.

Our new computerized purchase order writing covers 8,500 of the 10,000 items we buy at Sharon. It has proved less expensive than the manual system; it produces a neater, more uniform, and more accurate document. Most important, our buyers no longer need spend valuable time

making routine decisions and performing clerical work. Five days of lead time have been eliminated from the order processing cycle. This has reduced the amount of protective stock needed, lowered the inventory level, and given us more flexibility in controlling stock-outs.

Put EOQ on Tape

Basis of the system is our dollar segregation of inventory accounts. Of approximately 10,000 accounts in raw material inventory, 8500 are in the medium to low dollar volume range. These are called "probability accounts." The remaining 1500, in the high dollar area, are called "planned" accounts. Orders for the latter are not automatically produced.

The probability accounts have been programmed on an IBM 705 computer. Using an empirical formula, which includes lead time, usage, and safety stock, the computer calculates on a regular basis an economical order quantity on each item.

Previously, the EOQ's were printed out then posted to a permanent order information card. The card was routed to the buyer, and eventually to an order typist. Today the EOQ's are held on tape, matched with corresponding supplier information for that particular account or accounts (also on tape) and printed as a completed purchase order. The order is mailed directly to the supplier with no manual review.

The purchase order as it comes off the computer is identical to the one used for years. The computer has produced all the normal information necessary to process the order in addition, however, it has been instructed to make a number of judgments.

The first is that of reasonable units of requisition. In the case of certain hardware items that are

Mr. Johnstin is in the purchasing department and Mr. Pursley in the data processing section of the Transformer Division, Westinghouse Electric Corp., Sharon, Pa.



IBM 705 matches inventory and supplier files, producing an automatic purchase order tape.

purchased in lots of dozen, gross, etc. it will not order odd quantities. It makes a similar judgment in ordering drum packaged materials or steel from mills having minimum tonnage requirements.

Figuring Shipping Dates

Another computer judgment is made in the calculation of a shipping date. Using a five-day work week, the program will not request the supplier to ship on a company holiday or week-end. This is a perpetual program and does not require annual updating. Furthermore, as many as six quantity-price breaks per account can be carried. That is, the computer has the ability to insert the proper price for the EOQ ordered.

Finally, the computer pinpoints those materials ordered within the division and those having an "engineering hold." These, of course, do not generate a purchase order



Information from automatic purchase order tape is transferred to continuous purchase order form.



Punched cards are used to transfer changes to supplier tape. Change data may involve prices, terms, etc.



All basic information on inventory and supplies is already on tapes.

Only new supplier accounts and information changes initiated by the buyer are key punched for purchase order run.

but merely are noted in a message from the computer.

As the purchase order is automatically typed, an order information card is produced. This is fed into the next inventory run and shows up on the account as material on order.

As the final product of a day's run, an updated supplier tape is produced. Through the use of a "file maintenance" (change) card, we can make changes in one or all of the information fields without endangering information in the other fields. For example, a price, drawing sub, or cash terms could be changed without effecting the other descriptive material on the account. New accounts, on the other hand, are first prepared on a layout sheet from which sheet-card-tape conversion is made.

The new program wasn't set up overnight. We had a number of physical and psychological problems to overcome first.

Before the program was started we had to determine if it was justified in dollar savings that could be realized.

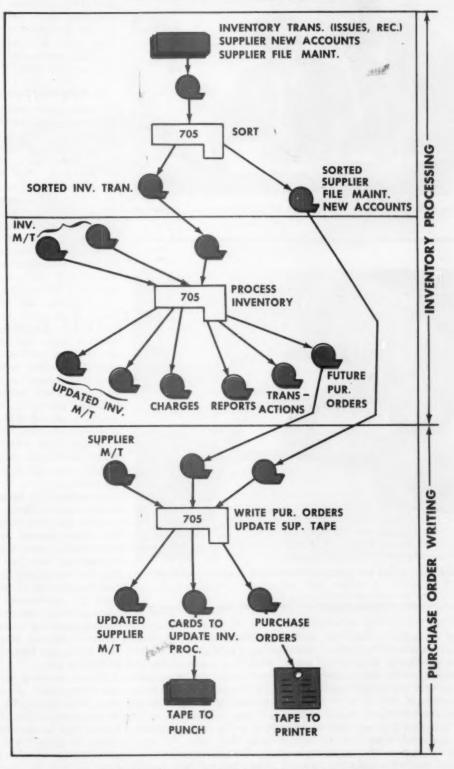
We also had to get the confidence and backing of the supervisors and buyers within the purchasing department. A change of this magnitude was somewhat radical, to be sure, but it was soon accepted when its advantages were shown.

The Worst Problem

One of the biggest and most time-consuming problems was converting a supplier file to a magnetic tape file. This involved many hours of accumulation of information — transposition of names and addresses, terms and conditions, shipping instructions, and all information necessary to process 8500 accounts. At the same time, we had to continue purging for errors and still keep up with day-to-day changes that were being made in the regular course of business.

After the file was built, the next problem was the integration of the automatic purchase order writing into the existing inventory programs. This problem was made easier by the fact that the inventory account number, with the







C. A. Pursley discusses program change with H. G. Johnstin, Jr., purchasing supervisor.



Printed purchase order sets are separated for internal distribution and mailing to supplier.

addition of an order suffix, becomes a purchase order number. This made possible a cross reference between the inventory exception tape and the newly created supplier tape.

For some years the main stores inventory program has provided a list of suggested EOQ's on a daily basis whenever an order point was broken. This same list (on tape) is now matched against the supplier tape and all the

necessary information is available for generating a finished purchase order. Should a sudden rise in the demand for an item take place provision is also made for generating a purchase order by merely entering a file maintenance card, although this is the exception rather than the rule. So the ground work for automatic purchase order writing was really developed in the original layout of the inventory job. All new sup-

plier accounts and file maintenance pass through the regular inventory programs. Only a short matching run is needed after the normal inventory processing has been added to produce the final purchase orders, new order cards, and updated supplier file.

Redesigned Purchase Order

Finally, there was the problem of the purchase order form itself. It had to be a form very similar to the one being used yet had to be a continuous form to be compatible with the 705 printing equipment. A national forms supplier provided a continuous purchase order form identical in content to the one formerly used.

In addition to the benefits already listed-lower cost, more accurate orders, elimination of clerical work for buyers, and greater flexibility in handling stock-outs -the system has other advantages. It gives purchasing a control tool to assure that each account is negotiated periodicallyeither every six months or every vear. Purchasing now has accurate load figures on the number of accounts and vendors handled by each buyer. On the basis of figures produced by the computer. a supervisor can shuttle items or suppliers from buyer to buyer. Finally, when the annual cost revision is due, unit prices are readily available.

At present the system has two disadvantages. There is only one supplier for each account. To order from another vendor it is necessary to enter a new account on the supplier tape. But plans for the future call for an automatic means of alternating vendors. No correlation is made to place several items ordered from the same supplier on one purchase order. We expect, however, to be able to do this by performing an additional sort.

We are running the automatic purchase order program three days each week. The computer run cost and the peripheral printer cost total 13 cents per purchase order. A greater volume would provide more matches and reduce even further the unit cost. To date, the monthly average has been 1320 documents.



When the P.A. Goes Abroad

Some practical business tips that will make the purchasing executive's trip to foreign lands more comfortable and—most importantly—more profitable.

By Rene Dentan,

President, American Rolex Watch Corp.

T ODAY, the United States is the world's largest international trader and investor. Traditionally an isolationist, the U. S. now controls almost one-sixth of all international traffic and more than a fifth of the world's flow of manufactured goods. In many respects, the economic facts of life are tending to make us a "have-not" nation—one urgently requiring imports to keep our industry running.

Under these circumstances, it is small wonder the American purchasing agent is rapidly becoming one of the world's most traveled people. The reason for his travels: to find sources of supply which will help his company maintain an equitable balance between cost and selling price.

When it is obvious that our stake in business overseas is so important; it is almost tragic that so many Americans remain blissfully ignorant of those with whom they would do business. Such ignorance on the part of the tourist is embarrassing; on the part of the purchasing agent it is both embarrassing and costly. In his foreign purchasing activities, just as in his domestic ones, the success of the P.A. is measured by the results he achieves results which will, in turn, depend on the empathy he enjoys with his suppliers. It is unfortunate that, unlike the company president who travels abroad accompanied by public relations experts to smooth the way, or local dignitaries who serve as buffers, the purchasing agent must often find his way alone.

Once outside the continental United States, there is only one rule of conduct which holds good. It is one with which every good purchasing agent is familiar: Study your market and act in accordance. The youngest sales trainee in any company will tell you that the breezy salesmanship which gets results in California will be offensive in Boston. Yet how many of us have a tendency to lump all countries across the Atlantic as "European"—and then attempt to apply the same business yardstick throughout that vast continent of so many different races, nationalities and heritages?

Swiss-born Rene Dentan has been president of American Rolex Watch Corp. since 1955. His frequent trips to Paris and Geneva make him a veritable commuter to Europe and a keen observer of international behavior patterns.



"Unlike the company president who has public relations experts to smooth the way, or local dignitaries who serve as buffers, the purchasing agent who goes abroad must often find his way alone."

A perfect case in point is related by Norman Dinnsen, director of purchases for the Weston Divis on of Daystrom, Inc., a company which has sales and manufacturing facilities throughout the world. Dinnsen tells the story of an American company which once sent its sales literature (replete with covering letter—all written in purest Castillian) to all of South America, the entire West Indies, and surrounding area. Back from Bermuda came a prompt response from a British businessman: "We thank you for your kind lines. . . . We should, however, appreciate it if in the future you would be good enough to correspond in French, in the event that English is not within the realm of the possible"

Things Are Different

The world may well be shrinking but it will be a very long time before the Texan scraps his drawl for a Down East Twang—and it will be twice that long again before the Swedish businessman concedes there is no real difference between himself and the Lisboa entrepreneur!



"One of the most remarkable things about the American businessman is his easy gracious sense of hospitality and the way in which he frequently manages to combine business, friendship and family . . . indeed we all know much may be accomplished over the pre-dinner cocktail."

We are all familiar with the old saying, "When in Rome..." This is still a very good rule—when in Rome. Roman manners applied in Berlin, however, verge on the ridiculous; applied in Saudi Arabia, they are downright stupid. Germany, Switzerland and Scandanavia, incidentally, are the three areas in which the American way of doing business is most easily accepted.

It is not only in face-to-face contact that a lack of knowledge about local manners and customs creates ill-will. Postal rates to Italy and Islam may be exactly the same (and they are), but the similarity ends right there. Italian business associates will appreciate a friendly Christmas Card from America; Moslem suppliers would be highly affronted. In the same vein: if your company's trademark shows a likeness of man or animal, you would be well advised to have a different letterhead or business card made up for correspondence with Islamic lands. Both of these symbols (man and animal) violate the teaching of the Koran.

There is one thing, however, on which these two countries and all others agree the use of excessive postage indicates that you are not a very smart or thrifty person and therefore one to be wary of dealing with. Also on the taboo list: envelopes of the window type for anything more personal than a bill of lading. In many lands, the use of such envelopes is considered poor taste.

Friendships Aren't the Same

To foreigners visiting in the United States, one of the most remarkable things about the American businessman is his easy gracious sense of hospitality and the way in which he frequently manages to combine business, friendship and family. The casual (and often sincere) invitation to a visiting businessman to join the family at a Sunday backyard barbeque is something uniquely and charmingly American. If a little business does happen to creep into the conversation, no harm has been done . . . indeed, we all know how much may be accomplished over the pre-dinner cocktail.

In other parts of the globe, friendship patterns are quite different. In India, for example, the idea of a guest even mentioning business in the home of his host is unthinkable and could well ruin an otherwise promising relationship. In France and

Latin America, too, home is reserved for family and close friends; an invitation to visit means you have really arrived.

Friendships are not established as quickly abroad, but they are apt to last a good bit longer. Once a friendship has been formed, it entails not only pleasant companionship but real responsibility a friend is a friend for life (not just until his company moves him to another location) and one's obligation to him is continuing.

"Business is business", we say in America, and nothing short of a death in the immediate family or grave illness is considered sufficient to disrupt the normal flow of business. The number of American fathers who annually miss their youngsters' graduation day ceremonies because of business trips, for instance, would be unbelievable to mil-

"Friendships are not established as quickly abroad, but they are apt to last a good bit longer. Once a friendship has been formed, it entails not only pleasant companionship but real responsibility... a friend is a friend for life (not just until his company moves him to another location) and one's obligation to him is continuing."



lions of other fathers throughout the world. Over here, the show must go on; over there, the reverse is frequently the case. In both Europe and Latin America, the family comes first always, friendship comes next, business conducted with friends follows—and business conducted with strangers is last. Make no mistake, the check book still talks,

WE'RE NOT VERY BIG, BUT WE MAKE A FINE PRODUCT AND WE'VE BEEN AT IT A LONG TIME!



"An American company will gain a great deal more respect abroad by stressing its age and the quality of its product rather than the size of its plant and the rapidity of its growth."

but American dollars will buy twice as much when they flow with the stream, not against it.

Once outside the U. S., time takes on an elasticity which many Americans find hard to understand. It is a part of our national temperament to "get things done, clean the matter up fast, and settle the whole thing right now." On the international scene, our way of thinking is not too common. Our often exaggerated enthusiasm, our high-pressure, aggressive selling which may help to make an American a success in his native land frequently works to his detriment elsewhere.

It is sometimes charged that foreigners are evasive but this is not necessarily true. They may well have a point in talking around a subject, in discussing a myriad of subjects before getting to the matter in which they are really concerned. What we must try to remember is that when we travel to other lands (and th's fact is as true of correspondence as it is of personal contact) we, in turn, become the foreigners. What we consider as being an honest, straightforward, right-to-the point manner, is frequently seen as an outright affront by businessmen in other parts of the world.

Time, many feel, has become a fetish to Americans. Our Japanese friends, for example, are



"In America, business is business. Nothing short of death in the immediate family is considered sufficient to disrupt the normal flow of business." shocked by the limited period of time in which Americans plan to accomplish their business in the Orient. They find it unbelievable when a man arrives in Tokyo today . . . and holds a return trip ticket for tomorrow's flight back to the States. Over many hundreds of years, the Japanese have operated on the theory that to conduct business too speedily implies that the matter at hand is unimportant and thus belittles the person with whom one is dealing. Ergo, the more important a matter is, the more time must be consumed in thinking about it. Thus does one pay tribute to the intelligence and stature of the man.

Pleasant but Sharp

Latin Americans have the same attitude about time, but their reasons are different. They like to be friendly about the whole thing, pay full attention to the amenities, establish rapport before getting down to business. They seem to imply that conducting business is just one of the necessary evils of life and that the real reason for the meeting is the pleasure of your charming company. (None of which pleasantry dulls one whit the very profitable manner in which Latin Americans conduct their business operations and the hard bargains they drive.)

The way we do business in the U. S. is frequently puzzling to the foreigner. Generally speaking, we conduct our business affairs company-to-com-



"Outside the U.S., time takes on an elasticity which many Americans find hard to understand."

pany. That is, we place our orders with a supplier only via the individual salesman, not because of him. While the account man may change, or his territory be shifted, if the supplier's terms and service are satisfactory we continue to do business with him.

Elsewhere, business relations are frequently on a much more personal basis. A buyer places faith in the *individual* with whom he is doing business. Under these circumstances, it is not hard to understand why some of our foreign friends find it upsetting to have to deal this week with Bob Smith, next week with Tom Jones, and the week following with Don Thompson. The fact that all these gentlemen bear the same company name and trademark on their business cards and letterheads and say they represent the same organization, only makes the situation more confusing.

Knowing this, you should try to make sure that it is always the same person who holds the communications responsibility. This is true whether your dealings are conducted in person or by mail. When thousands of miles separate two organizations trying to do business together, there is an added feeling of security if the negotiations are carried on through the offices of a familiar name or face.

In the same area, a U. S. company will gain a great deal more respect by stressing its age and the quality of its product rather than the size of its plants and the rapidity of its growth. Braggadocio tends to build distrust and sometimes fright—soft but earnest and sincere statements produce the best results abroad.

It's a great wide wonderful world—but only in America does the cubic footage allocated an executive indicate the importance of his position. We take it for granted that in any company, the top executive will have the biggest office, the most elegant decor, and be barricaded from lesser members of the organization by a battery of assistants and secretaries. Elsewhere, this doesn't necessarily hold true. If you are fortunate enough to conduct your business abroad in person, never judge the man by his office. The Italian reasons that by sitting in the center of the room which accommodates 57 clerks, he can also keep a close eye on the amount of work they are doing. Is he wrong?

Don't Discount Tradition

Foreign visitors to America are constantly surprised by what they call the prevalent "receptivity to new ideas". Let me quote from a British editor. "The abandonment of tradition is one of the most striking features of American methods, in contrast to our British tendency to cling to the 'good old way'."

It is hard for Americans—living in this climate of constant change—to realize how binding the ropes of tradition are, not only in Britain but throughout the world. I assure you, though, that overseas these feelings are very strong.

While there is undoubtedly much that we can teach older countries—more efficient production techniques, and new ways of doing things, there is also much that we can learn from them. They have great cultural traditions and they have surmounted obstacles which we, with a wealth of natural resources, fluidity of movement and industrial growth, can only imagine.

Realizing this, and keeping the facts in balance, is the keynote to doing business abroad. If you would be successful in buying from foreign sources, study your market and act accordingly.



In the fifteen years since its introduction, value analysis has become a basic activity in thousands of purchasing departments. Many have organized programs carried on by value specialists; others simply apply value techniques to day-to-day buying.

In this special section we present four approaches to value analysis, all of them typical of what is being done in the field by both purchasing executives and their suppliers.

The first article deals with one of the fundamental methods of seeking greatest value for money expended—price analysis. It explains the economic role of the purchasing agent in the industrial market-place and provides basic information on how to determine a "right" price.

This is followed by a brief discussion of some

This is followed by a brief discussion of some of the benefits a General Electric department has obtained from the "value consulting" system.

The next article is a study of how a value analysis program is working in a medium-sized company. Purchasing leads the way, but the success it has had is based on the help it gets from other departments.

A supplier's approach to a specific value analysis problem is the last case study. It obviously reflects favorably on one supplier, but the principles involved can and should be applied by vendors in any industry.

Price Analysis: First Step to Value

You can't be sure of value if you don't understand the wendor's pricing process. For most items, writers depend more on buying know how than on impersonal supply demand forces.

By Dean Ammer, Executive Editor

ARE prices really determined by impersonal supply and demand forces? This is what most purchasing men have been taught. But few of them really believe it -although they may pay lip service to the idea. If prices actually were determined in impersonal fashion, a major part of the typical purchasing agent's job would be eliminated. The P. A. would only have to worry about quality and delivery; price would be something that was set in some magic way and could never be challenged.

Prices of some items actually are determined impersonally by supply and demand forces. These include commodities traded on exchanges, like copper, crude rubber, etc. Although even these prices are partially influenced by the actions of major sellers and

buyers, the typical P. A. would indeed be foolish to attempt to seriously challenge the quoted market prices.

No Final Say

He can spend his time much more profitably on the administered price items that comprise more than 99% of most companies' purchases of parts, materials, and services. These prices are set by individual sellers. In some cases the prices are rigid and inflexible; producers have sufficient control of the market to arbitrarily set prices and make them stick regardless of the buyer's skill or the state of the market.

In most cases, the seller doesn't have the last word on prices. Able buyers can exert tremendous leverage on prices if they really understand how they are set and don't consider them divinely inspired.

Prices are set by suppliers who are human beings who may not be any smarter than the buyer but who do have somewhat more information available to estimate costs. In a really competitive situation, the supplier's pricing process-even though it may be surrounded by much pseudoscientific mumbo jumbo-is mostly a matter of outguessing competitors. Each supplier tries to fill his shop with work at the highest possible prices and his bids reflect his eagerness. The competitive bidding process works well for the buyer in such cases. Provided he asks competent suppliers to bid, he is almost always guaranteed good value.

Competitive bidding has its limitations, however. It doesn't automatically guarantee optimum value when there is a limited number of qualified producers of the product or when, for various reasons, there is little price competition among suppliers. On these items—and they comprise a big percentage of the typical company's purchases—the buyer must study the administered pricing process and negotiate skillfully and scientifically.

Higher Profit Margins

The fact is almost every gosupplier naturally tries to give the buyer a hard time. A well managed company's research, sales and advertising efforts center on one major objective: to improve the company's products so that they no longer need compete on the rather vulgar (and less profitable) basis of price. If a company can somehow convince its sales prospects that its products are uniquely superior, either by actual improvement or by skillful persuasion, then it won't be eager to shave prices. Successful product differentiation can work wonders on profit margins. Manufacturers in industries that compete almost solely on the basis of price usually consider themselves lucky to eke out a profit of 5% on sales. Manufacturers of genuinely unique products with little direct competition often earn a fat 25-30% on sales.

No intelligent P. A. will be upset by the premium price on a product that is actually different and in which there is little effective competition (like the Polaroid camera, for example). In such cases, the manufacturer is legitimately rewarding himself for his innovation.

Even though the P. A. may calmly pay a premium for a unique product, he should vigorously search for lower cost substitutes of equal quality. His investigation can be particularly profitable when the product differentiation is largely contrived by the seller—that is, when slightly different products work equally well and cost less.

In all cases where competition doesn't regulate prices perfectly, the P. A. shouldn't be bashful about bluntly challenging the supplier's price. When he does, he

helps not only his own company but also the supplier and the economy as a whole. When competition is imperfect and prices aren't regulated impersonally by market forces, some other regulatory force is needed. In a totalitarian economy, the force is exerted arbitrarily and stupidly by government bureaucrats. In a free economy it is exerted by the purchasing agent.

Every time a P. A. legitimately challenges a vendor's bid, he forces the vendor to re-check his costs and review ways in which productivity can be increased. Thus the P. A. is a substitute for the impersonal competitive market forces that determine the prices of materials. In this role, purchasing agents collectively are a tremendous force in the overall economy. When they award business to the efficient, low cost producers and force the high cost producers to either mend their ways or go out of business, they help make the over-all economy wealthier and more productive.

How Prices Are Determined

Although few of them would ever admit it (or even be aware of it), suppliers are also helped when the buyer acts as a substitute for impersonal competitive market forces. They are stimulated to make improvements they might not otherwise. And although sloppy purchasing will certainly permit a supplier to boost profits temporarily, the day of reckoning will come eventually. Only the supplier who is on



prices."

"At least you're honest about your

his toes can hope to get by with high prices, high profits, and average efficiency indefinitely.

Pricing can be a real problem for the supplier if prices are not almost automatically set for him by market forces. In such cases, the supplier's estimate of what the "right" price should be isn't much better than the buyer's estimate. Few suppliers will admit this, of course. But the reasons become obvious when we examine the supplier's pricing process on items where competition is limited. In such cases, prices are determined by each producer on the basis of:

Costs of production at various levels of output.

Selling prices of similar products by competitors.

Probable demand at various prices.

4. Profit objectives.

The establishing of an administered price is as much an art as a science. Each of the above four factors must be considered in making the final pricing decision. The final price often represents a compromise among conflicting objectives: e.g., the desired profits may not be achieved because of high costs, lower prices of competitors, or changes in demand.

Effect of Demand. When a supplier gets an inquiry from a buyer, he knows what the immediate demand is. But he might not know what the ultimate demand from the buyer will be. In most cases, the buyer doesn't know either; he can only guess what his own company's prospects are. But he should pass on to the supplier any non-confidential information on future demand in order to negotiate the most realistic price. The buyer should also try to determine what demand, if any, there will be for the supplier's products from buyers in other companies. He won't necessarily get accurate information from the supplier; he may have to base his estimate on his own general knowledge of the market. In general, the stronger the demand for the supplier's products and services, the higher the price the supplier can seek. It is the buyer's job to weaken this demand

by finding numerous alternate eager, able, and available suppliers.

Competitors' Selling Prices. Every company's sales department tries to keep up-to-date on the selling prices of competitors. On many products the job is easy. Published prices are readily available and producers actually sell at the published prices. For other products, the job is not so easy. Many times, neither buyer nor seller is fully informed on the selling prices of all possible competitors. The buyer is often better informed than the seller since he can always solicit bids from a number of suppliers. But many suppliers are better informed than some buyers give them credit for. Only a foolish (and unethical) buyer will deliberately mislead suppliers on their competitors' selling prices. But a buyer needn't go out of way to tip off his suppliers when his competitors are raising prices either.

Profit Objectives. Well managed companies almost always set specific targets for profits both in relation to sales and in relation to net worth. For example, a company might seek to earn 15% before taxes on sales and 25% on net worth or invested capital. One of the easiest ways to do this is to set selling prices high enough to virtually guarantee success. Almost every sup-

plier will do this if he is permitted to do so by competitors' selling prices, demand, and customer acceptance of his prices. No smart P. A. seriously objects if a supplier achieves his profit objectives. But he prefers to have it done through lower costs and increased efficiency—not through high prices.

Reflecting Demand

Cost of Production. No supplier will willingly sell below his stated costs and any supplier would be foolish to sell for less than his cash out-of-pocket cost. Cost of production is the most important factor in price determination since it sets the minimum level below which prices drop only on rare occasions. The supplier's pricing theoretically rests firmly on his estimates of cost of production. To this cost estimate he adds a profit which reflects his profit objectives moderated by his estimate of competitors' selling prices and demand.

For example, if a supplier calculates that unit costs will total \$1.00 on an item and his profit objective is a 20% return on sales, his bid would be \$1.20. Up to this point, the estimate may well be made by a junior employee in the cost department. But before the bid is submitted to the customer, a top executive—the sales manager, general man-

ager or president—would study it. It would then be modified to reflect over-all demand and competitors' selling prices. Usually, the bid would be reduced since the profit objective isn't usually reached. But sometimes, if demand were strong or competition were weak, the bid could easily be raised. No executive has ever been fired for earning profits greater than the objective!

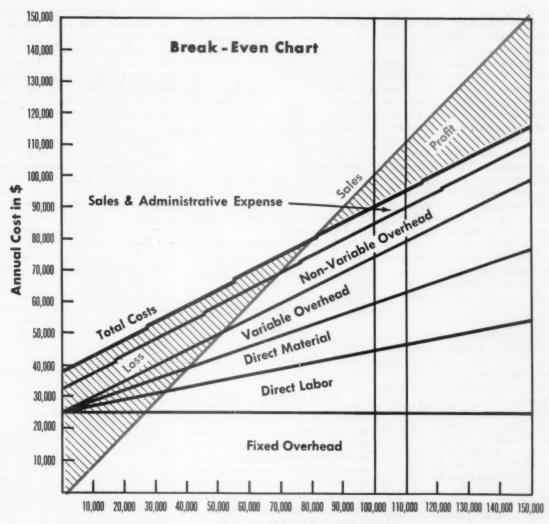
Thus the typical supplier's bid leaves the buyer plenty of room for legitimate negotiation. The profit margin is highly flexible and determined at least partly by the seller's estimate of what the traffic will bear. The cost estimate is also quite flexible. No supplier's cost estimate can be much more than an educated guess regardless of how skilled his estimators are. The supplier can accurately estimate his direct cash costs for making the item but he can't hope to do it for his indirect costs. The supplier's cost estimate has three components: material cost, direct labor cost, and overhead cost. Direct material and labor costs can be estimated quite accurately (although, in practice, suppliers' estimates can sometimes be wild for these components too.). They are direct costs and represent what the company must pay its workers to produce the item and its suppliers for raw material. While it is certainly not

Table I Costs, Profits, and Prices at Two Production Levels

	100,000 Units Total Cost			S Production Unit Cost
Direct Material	\$15,000	\$.15	\$16,500	\$.15
Direct Labor	20,000	.20	22,000	.20
Fixed Overhead	25,000	.25	25,000	.225
Non-Variable Overhead	10,000	.10	10,500	.096
Variable Overhead	15,000	.15	16,500	.15
Sales & Administrative Expense	5,000	.05	5,250	.048
Total Operating Cost	\$90,000	\$.90	\$95,750	\$.869
Profit	10,000	.10	14,250	.131
Sales (Selling Price) Profit (as % of Sales)		\$1.00	\$110,000	\$1.00

This table shows the effect of increases in production volume on unit cost. When volume goes up,

fixed overhead is over-absorbed, unit costs decline and open up opportunities for negotiation.



Annual Production in Units

Cost data, such as that illustrated in Table I on the opposite page, is often plotted to graphically illustrate the relation between cost and volume. The result is a break-even chart. Note that the supplier illustrated in our example, makes no profit at all when his volume drops to 80,000 units. On the other

hand, should he succeed in getting production up to 150,000 units, his profits will be enormous: about 35,000 or over 23% on sales. Although buyers rarely have enough information to construct break-even charts of suppliers, knowledge of the principles involved can be helpful in negotiation.

an easy job to estimate direct labor and material costs, no policy decisions by management are required.

Estimating overhead costs is more difficult. There are many ways in which overhead costs can be allocated among products and each results in different estimates of unit production costs. In addition, changes in production volume also affect overhead costs.

While most companies have cost formulas that permit them to allocate overhead within a tenth of a mil, their controllers would be the first to admit (to anyone but company customers) that their approach is essentially emperical and arbitrary. To see why, it is necessary to study overhead costs in greater detail.

There are three types of manufacturing overhead costs: fixed, non-variable and variable. Fixed overhead means exactly what the term implies. It includes costs that are incurred regardless of how much the plant produces. Real estate taxes, certain insurance premiums, depreciation on buildings and some equipment, salaries of certain personnel like watchmen, all cost the same regardless of whether the plant is operating at 100% of capacity or

only 10%.

Non-variable overhead is not quite as rigid as fixed overhead. It will vary slightly with changes in production volume but will not vary in direct proportion with such changes. For example, when a plant is producing near capacity, there might be a need for two receiving department foremenone on the first shift and one on the second shift. When the plant is operating at 75% of capacity, these foremen are still needed and non-variable overhead remains unchanged. But when operations are cut back to 40% of capacity, it is possible to get along with a single receiving department foreman and the "non-variable" overhead varies.

Sales and administrative expense (i. e. the cost of operating the "front office") usually behaves like non-variable manufacturing overhead. It is relatively unresponsive to small changes in sales or production volume. But when there are major changes in sales, it will increase or can be reduced

Variable overhead is similar to direct labor and direct material costs in that it varies in direct proportion to production volume. If production volume doubles, variable overhead costs also double. Examples of variable overhead include the cost of most public utility services, perishable tools, various operating supplies, and depreciation expense when it is calculated on the basis of machine hours.

Fixed Costs Create Problems

The fixed and non-variable costs create the problems in pricing. Table I (p. 92) illustrates why this is true. One column in the table shows costs for a hypothetical manufacturer whose production volume is 100,000 of an item he sells for \$1.00 each. At this volume, his unit profit is 10¢. Total profit of \$10,000 or 10% on sales permits him to achieve his desired return on investment.

Now suppose this manufacturer is able to boost his sales 10% to 110,000 units. Note that his costs do not go up proportionately. They increase by only \$5,750—from \$90,000 to \$95,750. In other words

the additional 10,000 have a unit cost of 571/2¢ each (\$5,750/10,000). If the manufacturer can maintain his selling price of \$1.00 each for the extra volume, he can boost his profits 421/2% (from \$10,000 to \$14,250) with only a 10% increase in sales! The reason for this, of course, is that fixed and non-variable costs do not increase proportionately as output expands. These costs are what accountants call "over-absorbed"i. e. already paid for by being allocated over a lower level of output.

Of course, if the company could plan on a production of 110,000 units it could cut prices and still achieve its profit objective. If we assume that \$10,000 profit provides an adequate return on investment, then a unit profit of just over 9¢ would be required if production were 110,000 units. With costs of \$.869 at this level of output (see Table I), the price could be cut from \$1.00 to about 96¢.

Don't Hesitate to Ask

The above example indicates that supplier can accurately forecast his costs only if he can forecast his sales and production volume. Since relatively small changes can cause substantial changes in stated costs, no P. A. need hesitate to ask a supplier to reduce a bid.

Despite the P. A.'s best efforts, manufacturers can usually increase sales without reducing prices when markets are strong and business is booming. The result is sharply higher profits. On the other hand, when sales drop off in a business downturn, suppliers may review costs and decide that it is profitable to sell below "cost" if necessary in order to keep their plants operating at levels sufficient to pay fixed overhead expenses.

The resourceful purchasing executive can exploit his knowledge of the supplier pricing process and the relationship between cost and production volume in both boom and recession. He can do this with make-or-buy decisions, grouping of orders, and by taking advantage of or even exploiting sales gains.

Make or Buy. It sometimes pays to make an item even though it can be bought more cheaply from an outside supplier. The reason, of course, is that when it makes an item a plant is able to absorb some of its fixed overhead costs. This is true only when the plant is operating at a fraction of its normal capacity. When it is operating near capacity, on the other hand, it often is economical to buy items from an outside supplier which can be made much more economically. The reason: costs can soar well over standard when a plant is operated beyond its normal capacity. Expansion may not always be a solution since additional capacity increases the fixed and non-variable costs which must be absorbed.

Grouping of Orders. Many P. A.'s get spectacular cost reductions by offering suppliers a "package" of business for all requirements of a group of similar items. Both buyer and seller benefit since it is possible to process like items in large quantities at lower costs. Production is greater and unit overhead costs are lower. As is obvious from the figures in Table I, a supplier making 100,-000 units of an item is often willing to offer price concessions if he can get a customer to take an extra 10,000 units. His costs justify a price reduction and his profits will be greater if he offers a price cut less than his actual reduction in costs.

Exploiting Sales Gains. When business is good, companies buy more from their suppliers. Since the extra volume helps reduce costs, smart P. A.'s don't hesitate to ask their suppliers to pass on the benefits by cutting prices. If suppliers know that no one else will sell the item at lower prices, they will usually refuse to cut prices. (Needless to say, they're usually less than candid about the real reason; usually they insist costs have gone up.) Even when this happens, the buyer's efforts may not have been in vain. In many cases, he can still apply his knowledge of cost. He can persuade suppliers to absorb the increases in wages and material costs that almost inevitably occur when business is good.

Value Consulting Pays Off

Value analysts can do more than analyze component parts and materials. They can also serve as value consultants to purchasing, manufacturing, and engineering.

> By Richard A. Quinn, Specialty Department,

VALUE ANALYSTS are becoming value consultants at the Specialty Transformer Dept. of General Electric Co., Western Springs, Ill. The result is a more diversified activity that is a challenge to the consultant and a source of greater profits for the company. The following are some typical consulting tasks:

Six Ways to Save

1. A request from the chairman of a cost reduction committee who has only been able to achieve 67% of his cost reduction goal for the month. Can the value analyst help? Value analysts studied operations. They noticed a few cost reduction possibilities. Then they conducted a two-hour lecture and discussion session with all the members of the cost reduction committee on value analysis techniques. It is hard to measure the success of this counseling. But it is probably no coincidence that the cost reduction budget realization reached a monthly high of 513% in the succeeding month and ended the year at 170%.

2. It may be as simple as telling an engineer, who has stopped to look at the vendor's products on display in the value analysis office, where he can obtain additional information, approximate costs, or suggesting he see the buyer.

 A product engineer has a complaint problem. The insulation board in a certain product is being damaged during shipment. Can the value analyst suggest a material that does not cost more than twice as much but will stand the impact encountered in a shipping drop test. In this case, the value analyst suggested a material that had much better impact strength and was equal to or better in all other important requirements. The cost? Not twice as much—just 87% of the cost of the inferior material originally used.

4. The manufacturing man who has the problem of inexpensively connecting a shielded cable to a case. A large brass eyelet was the key to his problem. The eyelet had been left with the value analyst by an engineer who was looking for a less expensive replacement. The engineer is still looking, by the way, but now he has the value analyst helping him. Not all problems can be solved so easily.

5. The buyer that wondered who the "Q.P.L. Sources" were. The value analyst didn't know either, but he called the local office of Inspector of Naval Material and found out. The buyer was then able to save \$2.95 on a \$9.50 meter, merely by changing to another approved source.

6. An engineer, bringing only rough sketches and a head full of ideas, wanted help in a "before-the-fact" analysis of what would be his design. An example of the results of this type of consulting is a bushing assembly, which the engineer intended to use, being reduced from \$1.00 to \$.37.

The value analyst's contribution can be less direct. He is a natural for helping a cost reduction committee. He can also maintain a vendor display board and a file of supplier information and keep abreast of new materials and changing prices.

Value Analysis activities can stimulate cross-pollination of ideas, materials, and processes used in one area but unknown in another. For example, the problem on "Q.P.L. Sources" shows the application of one of the twenty basic value analysis techniques: "Get Information From The Best Source."

Better Before Than After

Helping with "before-the-fact" studies is not much different from the typical "after-the-fact" value analysis. However, it is sometimes hard to understand the engineer's concept when in the rough sketch state. "Before-the-fact" analysis works better is usually more effective after a sample has been built. Similar units can also be used to simulate parts of the new design.

Most people are complacent and need constant restimulation to continue their search for better value. A detailed report showing the results of a good value analyzing job will usually stimulate the buyer, the engineer, and the manufacturing man into looking for better value. When they are looking for value they consult the value analyst frequently.

- END

A New Twist on Value Analysis: The Grouping Approach

Elwell-Parker's experience with value analysis proves that VA isn't a tool that's restricted to the mass-production industries. By using the grouping approach, Elwell-Parker has made substantial cost reductions even though the company manufactures specialized products in limited quantities.

By Paul Mitchell,
Director of Purchases,
The Elwell-Parker Electric Co.

EVERYBODY gets into the value analysis act at the Elwell-Parker Electric Company. Purchasing has the overall responsibility for VA but we welcome all the outside help we can get. That's why the value analysis committee itself consists of the director of purchasing, the chief engineer and the plant manager.

Chairmanship of the group rotates quarterly among the three members to focus attention on problems foremost in each department and to equalize the emphasis in each departmental area. Functionally, the committee assigns projects to the purchasing department's value analysis section, reviews results of the VA sections work, and decides whether any recommended changes will be put into effect.

Although cost reduction is the ultimate goal, we do not look upon value analysis as just another cost reduction program. As a matter of fact, effective value analysis may improve product quality without affecting costs at all.

Simply stated, our program is designed to:

(1) Substitute lower-cost parts

and materials where such substitution can be accomplished without sacrificing product quality.

(2) Reduce machine time by eliminating unnecessarily close tolerances, fine finishes or design features not essential to operational effectiveness.

(3) Standardize design of assemblies, sub-assemblies and components.

(4) Substitute standard, easily-procurable hardware items for special parts where custom design is not essential. (5) Utilize the best and most economical manufacturing methods; redesigning a product, if necessary, to make this possible.

(6) Take full advantage of our suppliers' abilities to produce items of better quality — or at lower cost—than is possible in our own operation.

Our company makes a comprehensive line of standard models in electric fork-lift trucks, platform trucks, tractors and industrial cranes. In addition, we manufacture various types of indus-

Help on Value Analysis

A limited number of copies of the highly popular June 8, 1959 Value Analysis issue of PURCHASING Magazine are being made available to purchasing executives seeking assistance on V A. Included in the issue is an article on purchasing's stake in value analysis, tips on how to apply value analysis techniques to purchases of components, materials, production tools, electrical equipment, materials handling equipment, packaging, office equipment and MRO supplies. In addition, there is an article outlining the 20 basic keys to value analysis worked out by the General Electric Co., plus hundreds of value analysis cost reduction case histories.

Copies of this issue are being offered at a special discount price of 50¢ each. Write: Circulation Dept., Purchasing Magazine, 205 East 42nd St., New York 17, N. Y.

trial trucks built to customers' specifications.

Because of this wide diversity in product types—and the comparatively small quantities of each that are made — there is little standardization of parts among models. As individual items, very few components can justify a long, involved cost reduction study. The only economical way, therefore, to conduct the analysis is to group similar items into one category, attempting to apply the same savings techniques to each.

A look at some case histories illustrates the function and accomplishments of our value analysis committee:

Elwell-Parker manufactures electric industrial trucks ranging in capacity from 2000 pounds to 80,000 pounds. The larger sizes feature specialized types of steering mechanisms, mostly hydraulic or power assisted. The smaller models use a fairly standard automotive type steering arrangement, both manual and power assisted. At the time of the survey, the company was using over 40 models and types of steering gears on the smaller vehicles, differences appearing in the length of gear, direction of rotation, gear ratios and actuation (manual or power assisted).

Had to Standardize

The problem was obvious: standardization was needed to provide as much interchangeability as possible between various truck types, taking into consideration the replacement-parts inventory for earlier truck models.

After careful study and evaluation, the value analysis committee was able to reduce the number of steering gears required for both current production and service stocks to 18. This was accomplished primarily by consolidating steering gears with minor variation in length, by standardizing mechanisms that could either be equipped for horn operation or blanked off, and by combining similar steering gears having the same approximate torque and ratio requirements.

A related benefit of this survey was the development of a chart listing the standard steering assemblies and including an



Elwell-Parker's value analysis committee has proved that there's a definite place for VA in a company that makes a specialized, small-volume product. Shown here at a recent value analysis committee meeting are (I to r.): Value Analyst Harry Gerwin, Factory Manager C.A. Phelps, Chief Engineer J.A. Draxler, and Director of Purchases Paul F. Mitchell.

interchangeability list for all gears used in the past. Use of this chart permits the engineering department to select an appropriate steering mechanism for a new truck model with considerably less research than was required in the past.

A project such as this is very difficult to evaluate in terms of tangible savings. In many situations, the superseding steering gear actually costs more than the gear being replaced. All in all, however, the value analysis study contributed these direct benefits:

(1) An inventory saving amounting to thousands of dollars because it is no longer necessary to carry so many models in stock.

(2) An upgrading in replacement parts. Older-style mechanisms are now replaced with newer, more efficient gears completely interchangeable in the field.

(3) Development of a complete interchangeability chart saving hours of engineering research in new and special truck design.

(4) Consolidation of over 90 steering-gear prints into 14 standard drawings.

A check of the results achieved by the value analysis committee determined that the number of hours devoted to this project were exceedingly well spent, even though the monetary savings resulting from the study cannot be tabulated accurately.

The company formerly made tubing for hydraulic cylinders by traditional honing methods, achieving a surface finish of 7 to 12 rms with a very high degree of concentricity and straightness. The cost of honing to the tolerances required varied from \$8.00 to approximately \$75.00, depending on the diameter and length of the tubing required.

Determined to discover a more efficient and economical method of finishing the inside diameter, the value analysis committee investigated a number of alternate production methods, including boring and reaming; boring and internal grinding; boring and ball burnishing; and boring and roller burnishing.

Study and experiment proved that boring and roller burnishing afforded the greatest potential for cost reduction without any loss of quality. Two sizes of tubing are now being processed by this method at a total tooling cost of less than \$500.

Savings realized by this technique are about 56%—approximately \$3000 per year on these two sizes of tubing alone. Minor processing difficulties have been overcome, and the surface finishes are consistently better than they previously were. Since the



Value Analyst Gerwin and Director of Purchases Mitchell study carbon pile on Model F-50T truck for possible cost reduction ideas.

research and ground work has been conducted and the tooling determined by the experiment in the first two sizes, the technique can now be readily adapted to additional tubing sizes with further savings of many thousands of dollars in machining costs.

Another example of our value analysis work: Elwell-Parker production and service requires over 300 different sizes of springs ranging from .002" x ½" to exceptionally heavy springs hotwound from 1" rod.

Ask for Quotes

An intensive study of spring requirements resulted in consolidation to approximately 50 types through elimination or combination with similar items. Designs for many hard-to-make springs were simplified, and technical as-

sistance from vendors resulted in product improvement through redesign of many of the items.

A SECTION OF

In a second phase of the analysis, vendors were categorized and the total number reduced to eight. Each of these suppliers was invited to quote on all of the springs within his scope, and each was requested to submit recommendations for further design changes. By purchasing from fewer vendors, we obviously became a larger customer for each of them. This helped us to get better service and—in many cases—lower prices.

Total savings accomplished by the analysis was approximately \$7000 per year. But improvement in product quality and service are probably more significant than the actual cost reductions themselves. Several additional items are now being surveyed in a similar manner, using the same grouping technique rather than treating each component individually. Value analysis criteria should include an appraisal of material substitutions, changes in production methods, volume purchasing and other areas applicable to all units within the group.

These Are the Results

Two general groupings now being analyzed are insulating washers and forms and sealing washers and forms. Sufficient progress has already been made to predict the final results with some accuracy:

- A reduction in the types of insulating and sealing materials used from almost 30 to about 10.
- An overall 10% savings on the two groups of washers.
- A 20% reduction in the number of items required as a result of combination or elimination.
- By reducing the number of vendors to two or three for both groupings, we will accomplish substantial savings in paperwork processing in the receiving, recording and accounting sections.

We admit that cost reduction through value analysis in a company such as ours is not as spectacular as savings accumulated by companies mass-producing a standardized product. We are nevertheless convinced that companies manufacturing limited quantities of single items can take full advantage of value analysis.

However, it is necessary to use a different approach. The technique of analyzing a group of similar parts simultaneously is one effective method that can be used in this situation.

Elwell-Parker has scheduled further studies in the areas of design simplification, "make or buy", standardization of components and manufacturing methods. We feel that VA techniques, whether used as part of a formal program or as a side function of another operation, can be a definite asset to a company of any size manufacturing any type of product.

Value Analysis:

The Newest Supplier Service

Vendors are getting into the value analysis act by cooperating with purchasing departments in their costreduction programs. The result: lower material costs for the P.A. and more sales for the supplier.

A NEW TREND is shaping up in value analysis: suppliers are setting up departments with the responsibility of helping P.A.'s solve their value analysis problems.

For example, take the case of the Belle City Malleable Iron Company, a malleable foundry in Racine, Wisc. This vendor now has a department which provides potential buyers with a value "package"—a design which can be economically produced, has functional integrity, and is engineered to meet specific requirements.

While this new department also has an engineering function, its long range aim is to demonstrate to buyers and potential buyers that:

(A) Malleable foundries can provide castings of uniformly high quality.

(B) The material has applications frequently overlooked by designers.

(C) Malleable competes favorably with other materials in the areas of strength, machinability, costs, and reduced weight.

Belle City has added experimental stress test equipment to quantitatively establish the strength limitations of designs. These tests pinpoint highly stressed areas in the casting. Provisions are then made in the redesign to add strength where in-

dicated and eliminate weight where possible. Once the specific performance level of the casting has been established, foundry costs are figured.

Designs are made, of course with economy in mind. Along with a low cost in the delivered part, however, the vendor also considers possible savings which can be made in subsequent machining, assembly, and fabricating.

In one recent instance, Belle City product engineers provided a customer with a cost-performance estimate on a ram anchor. This is a component for a disc harrow attachment and is subjected to a

(Please turn to page 300)

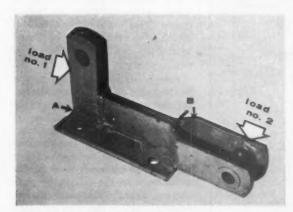


Figure 1—When this weldment was found to be unsatisfactory, a Malleable foundry supplier gave it a special stress test. By applying directional loads, the weak points were determined and the crack patterns could be analyzed.

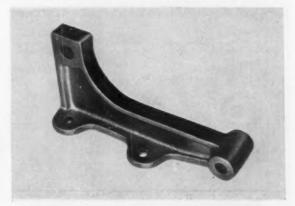


Figure 2—As a result of the load tests, this casting was designed which dispersed the strain at critical points and strengthened the highly stressed areas. This is a perfect example of the way an alert supplier can help a customer with technical problems.

This article is one of a series illustrating and explaining the use of various purchasing department forms. All forms that will be described in this series have been selected from representative purchasing organizations around the country.



Two chicago firms tried new approaches in designing their purchase order forms. H. V. Gamper, general purchasing agent, Illinois Central Railroad, uses an almost square (8½ x 8) form, marginally punched for

automatic feed. A few blocks away at the Maxant Button & Supply Co., Purchasing Agent J. T. Pressley selected a snapout form which measures 8½ x 11¾. It is a six-part combined purchase order and receiving

form. Because Maxant found that 95% of all orders are received complete in one shipment, the receiving report was made part of the purchase order and both are prepared in one operation. The receiving clerk has only to sign the form after checking in the merchandise. Mr. Pressley says, "This method has eliminated a lot of writing and cleared up the 'bottleneck problem' in our receiving department."

0 0 FEB. 2, 1960 0 0 0 0 0 0 SHIP TO ILLINOIS CENTRAL MAILMAN COMPANY CA 0 0 DESTINATION Quantity 0 DOZEN \$3.60 DOZEN NUT CRACKERS 0 PLUS 3-1/25 IUT 0 0 26 10 D 0 0 0 C 0

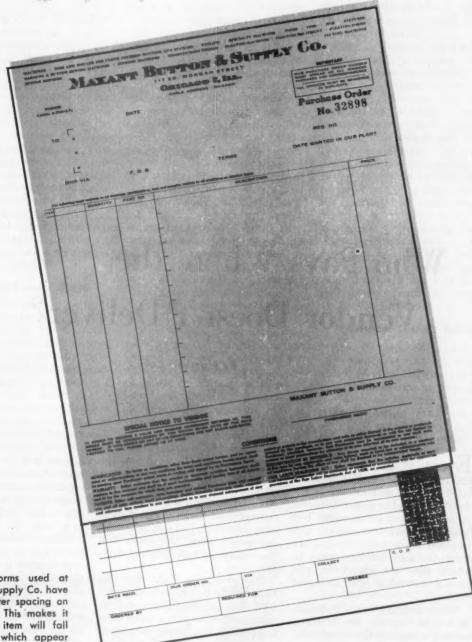
The Illinois Central Railroad uses a marginally punched purchase order form designed for fast processing of a high volume. Note that order numbers are not preprinted; the number system also serves as a code for proper allocation of expenditures.

Has Room for Notes

A number of other interesting features are included in the Maxant purchase order: The vendor's copy is perforated at a lower position than all other copies. This permits note-making which is permanently registered at the top of file copies, but does not appear on the original.

Another feature worthy of note is the printing of terms and conditions on the first three copies only. Since this information is "waste baggage" on internal copies, it is omitted and reduces the size of these copies to $8\frac{1}{2}$ x 10. To make intra-company copies even more to the point, the purchasing agent's signature and a "special notice to vendor" are also eliminated from these copies.

The Illinois Central order form, printed on 12 lb. register bond white, is also a six-part form. The



Purchase order forms used at Maxant Button & Supply Co. have preprinted typewriter spacing on the original copy. This makes it certain that each item will fall within the boxes which appear on internal copies of the order.

second copy is plainly marked "Invoice Record" and is held aside for that purpose; the third is forwarded to the storekeeper; fourth goes to requisitioner; and the fifth and sixth copies are used when inspection is a requirement, or for extraordinary routing, such as a copy for an officer of the company.

Mr. Gamper is acutely aware

that each additional copy of the purchase order creates another filing operation—if not in purchasing, then somewhere else in the company. Therefore, every attempt was made to keep the number of copies to a minimum. For example: The store department uses the packing slip or shipping notice as a receiving document. This eliminates the

need for a second, third or possibly even fourth copy of the order in the event of multiple shipments.

Despite the fact that these two companies have a different size and different type purchase order form, they do have two key objectives in common: abolish unnecessary paperwork and maintain efficient, time-saving controls.

- END

Who Pays When the Vendor Doesn't Deliver?

By Marshall Coke

EVERY PURCHASING agent knows that if a supplier breaks a sales contract and refuses to deliver merchandise under its terms, he may be sued for damages. But how much can you collect? Unless you know how damages are computed, and the legal basis on which they are recovered, you cannot formulate the strongest contract.

When bringing suit for breach of a sales contract, the buyer is entitled to recover the actual damages he has sustained. These have been described as the direct, natural, certain, and probable damages which the parties could reasonably have foreseen at the time the contract was made. For instance, it has been held that where the seller delivers property which is substantially different from that ordered, and the buyer does not detect this difference until after unloading and paying the freight

expense, then he may sue for the purchase price and may collect freight and unloading expense as well. Ordinarily, a buyer cannot recover more than the actual damages sustained. In cases where he can prove none, the court will merely award him nominal damages.

One court has held that the buyer could not recover damages for failure of the seller to deliver merchandise under a sales contract when the buyer purchased the same merchandise from another source at the same price. Hence, since the buyer suffered no damages he could recover none in his suit.

The purchasing agent should remember that it is his duty to use all reasonable care and diligence to mitigate the damages his company sustains when a supplier breaches a contract and fails to deliver. He cannot expect to recover expenses incurred because he failed to exercise such diligence. Thus, if a supplier fails to

deliver, it is up to the purchasing agent, to purchase the material required on the available market at the lowest possible price. Failure to take this step may result in a loss.

In some instances purchase contracts are written in an attempt to anticipate possible damages in the event of a breach by the supplier. Such damages are termed "stipulated damages" and as a general rule they will be enforced by the courts if they are reasonable. This is particularly true when the damages are difficult to prove and nebulous to foresee.

It is also possible to arrange for damage payments after the breach has been made. In this situation it is imperative that a written, signed, contract be made. Agreements made after the breach will be enforced by the courts, provided they are supported by sufficient consideration. Many courts have held that forbearance to sue is sufficient consideration to support such a consideration to support such a

Marshall Coke is the pen name of a well known member of the bar who holds a responsible purchasing position.

tract.

In the simple and straightforward case where a supplier breaches a contract by simply failing to deliver, the measure of damages is the difference between the contract price and the market price. This rule applies where similar goods are readily available in the market at the time of the breach, or at the time the materials are required by the purchaser. It has been held that the extent of damages for a breach of contract is derived by deducting the contract price from the market value of the goods which could have been purchased at or near the place of delivery and within a reasonable time after seller's refusal to make delivery.

Buyer Can't Make Claim

If the market price is the same or less than the price in the sales contract, then the buyer is not entitled to recover any general damage, and any recovery on a suit will be limited to special damages which may be proven. On a contract covering goods which were to be manufactured in New York, for instance, a court held that the measure of the damages was the difference between the contract price and what it would cost to have the goods manufactured elsewhere, provided there were no special damages contemplated at the time of the contract.

Suppose you have a contract with a supplier and he fails to deliver on the promised date. In order to supply your company's requirements you purchase goods of a similar nature but of an inferior quality from another supplier. It has been held that you can recover at least the difference between the market value of the quality goods-the ones which were not delivered-and the price of the goods in the contract. If you make a contract with a supplier for goods which are to be manufactured by him and which do not have an established market value, some jurisdictions have held that the damages caused by failure to deliver is the difference between the contract price and what it would cost to have the good manufactured by someone

Suppose you make a contract with a supplier to manufacture special components which have absolutely no use elsewhere and therefore no market value whatsoever. If the supplier does not deliver the components, how is the damage computed? In such cases you are entitled to recover the amount of the actual loss directly and naturally resulting from the seller's breach. It will be up to your company to prove loss of sale, loss of profits, etc.,

caused by the failure to deliver. The total amount would be recoverable damages.

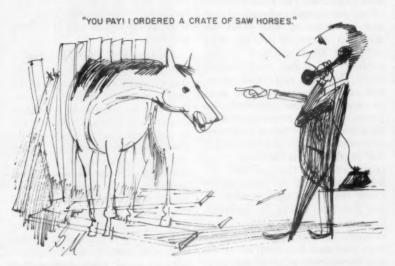
Another problem arises when a contract with a supplier covers deliveries over an extended period of time. Some courts have held that in case the seller breaches the contract, the market value used to compute the damages must be determined by the average market price during the period, and not the market price at the beginning or end of the period. The buyer does not have the privilege of computing the damages on the basis of the highest market price during the period of refusal to deliver. Damages may be computed from an average price or on the basis of what it actually costs to make a replacement purchase compared to the contract price.

If Supplier Doesn't Deliver

The Uniform Sales Act provides that where there is an available market for the goods in question, the measure of damage, in the absence of special circumstances showing proximate damages of a greater amount, is the difference between contract price and the market or current price of the goods at the time or times when they should have been delivered, or if no time was fixed, at the time of the refusal to deliver.

One important aspect of the law of damages is that the buyer cannot purchase goods of a higher quality and expect to recover the difference between the price paid for the high quality goods and the contract price of the lower quality goods. The only exception is in the event the buyer cannot obtain goods of equal quality on the open market and has to substitute more expensive goods.

If a supplier fails to deliver a special item that must be manufactured, you will have the choice of either entering into a contract with another manufacturer, or making the item in your own plant. If you decide to make the part yourself, you are entitled to recover the difference between the contract price and what it cost to produce the goods. In computing the cost of manufacturing



"When the seller delivers property which is substantially different from that ordered, and the buyer does not detect this difference until after unloading and paying the freight expense, then he may sue for the purchase price and may collect freight and unloading expense as well."

you cannot include any manufacturer's profit, and it is important to maintain accurate cost records. If you cannot establish to the satisfaction of the court the cost of producing the goods you will jeopardize the possibility of collecting damages,

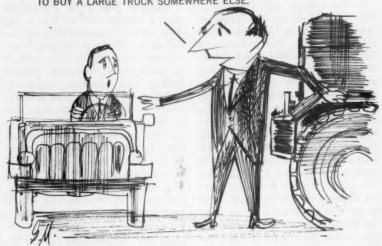
The courts have held not only that it is the buyer's duty to mitigate damages upon a breach of contract, but that he should do so in a reasonable time. The buyer is entitled to recover as part of damages, allowances for reasonable and necessary expenses incurred in making the repurchase. Thus out-of-town trips and inspection trips required to select alternate merchandise are legitimate expenses which may be recovered.

If a contract provides for receipt of the goods on a credit basis and in the event of a breach you cannot find a supplier willing to allow substantially identical credit, you are not required to purchase on a cash basis in order to mitigate damages. Also, if you find that you will not be able to purchase goods on the open market in time to supply the demands of your customers, you will not be required to make a repurchase in order to collect damages.

Must Buy at Lowest Price

It is important to emphasize that you must buy replacement goods at the lowest possible price and at a place where they can be delivered at the least expense while, of course, maintaining equivalent quality. If you should buy your substitute products at a price above the lowest possible price, then you can recover only the difference between the contract price and the lowest price, and not the difference between the contract price and the price paid. If you purchase other goods without making any inquiry as to the market conditions or seeking other quotations, then you cannot expect to recover the difference between the contract price and the price you eventually pay if it is higher than the market price.

When a supplier fails to deliver, you are under no obligation to actually make a repur"WHEN YOU DIDN'T DELIVER THE JEEP I HAD TO BUY A LARGE TRUCK SOMEWHERE ELSE."



"The buyer cannot purchase goods of a higher quality and expect to recover the difference between the price paid for the high-quality goods and the contract price of the lower quality goods."

chase, and even though you do not go ahead and purchase the goods specified on the contract, you still can recover from the supplier the difference between the contract price and the price you would have had to pay to procure the goods at the time of the breach. If however, you do buy or repurchase at a price which is less than the contract price, you cannot recover any damages.

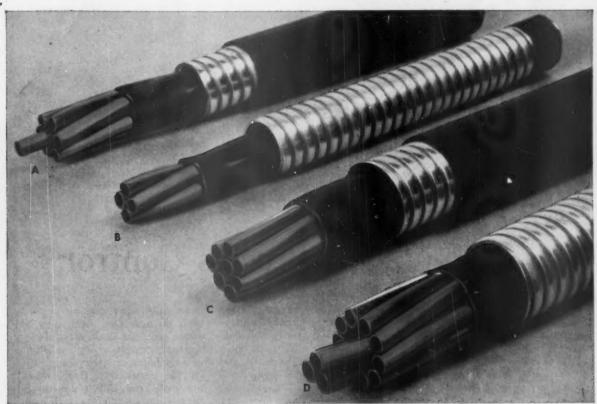
Suppose a supplier informs you in advance that he will not be able to deliver. You have a choice of either immediately going out and repurchasing the goods on the open market or you can wait until the time specified in the contract to make your repurchase. However, you should exercise caution because if you purchase before the specified delivery time at a price greater than the contract price, you cannot recover if in the meantime the market price declines to a point where at the specified delivery time it is the same as or lower than the contract price. If you purchase before the delivery time specified in the contract, the recoverable damages is the difference between the contract price and the market price at the time of delivery. In other words, you can lose by purchasing too soon, but you cannot gain.

If, in formulating a contract of

sale you can foresee damages in excess of what it would cost you to buy from another source, then you should specifically include the nature of the damages in the written contract. This puts the seller on notice that he will be obligated for special damages if he breaches your contract. Otherwise, the seller is only obligated for damages which he could reasonably have foreseen by exercising due diligence. One court has held that special damages resulting from a failure to deliver are available only when the purpose for which the goods were intended was known to both

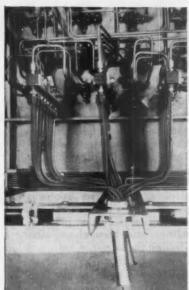
Prevent Misunderstandings

Purchasing agents are constantly making sales contracts. Of course the most important function of a contract is to formulate an agreement between the parties to prevent misunderstandings. The legal consequence of a contract, however, is the basis for collecting damage if one of the parties fails to perform. Therefore, the purchasing agent should thoroughly familiarize himself with the damages which he may collect on a breach of the contract and keep these legal principles in mind when formulating the contract with his suppliers. In this way he will be able to write the most effective contracts.



BAILEY ARMORTUBE is available with A, thermoplastic sheath over steel armor; B, thermoplastic sheath under steel armor; C, thermoplastic sheath over and under steel armor; or D, with just steel armor.

For its "Armortube" control system cables, Bailey specifies Anaconda precision copper tube in long coils



A TYPICAL INSTALLATION of Bailey Armortube in a large utility, indicating the large number of separate lines carried by two easily installed cables.

Armortube® flexible, armored, multipletube cable made by Bailey Meter Company, Cleveland, Ohio, has saved up to 40% of single-tube installation and maintenance costs in pneumatic, metering and control systems.

Armortube cable is available in lengths up to 1000 feet and in bundles of up to 19 individual ¼" O.D. copper tubes. Steel interlocking armor protects the tubes from mechanical damage and simplifies installation. In addition, various combinations of thermoplastic sheathing are available to provide further protection from moisture and corrosive atmospheres during and after installation.

CLEAN AND DRY. The copper tubes must meet rigid quality specifications, and Bailey has found that Anaconda copper tube consistently meets its requirements. Anaconda takes special care to see that inside surfaces are clean, smooth, and bright—free from dust, dirt, or metal chips which might interfere with the operation of delicate air and hydraulic circuits. Tube ends are sealed to keep out moisture and foreign

matter during storage.

PLEXIBLE AND ACCURATE. Anaconda copper tubes are uniformly soft, highly flexible—for easy bending during installation. And they are accurate in size and shape.

instrumentation, Anaconda can produce copper tubing in coils up to 2200 feet for ¼" O.D.—up to 1400 feet for 3%" O.D.—up to 1000 feet for ½" O.D.

QUALITY TUBE AND CREATIVE TECHNICAL SERVICES. Whatever your requirements for precision copper tubing—instrumentation or capillary tubing, or restrictor tubes — Anaconda specialists can help you find the most economical way to do the job. For such technical assistance, see your Anaconda representative, or write: Anaconda American Brass Company, Waterbury 20, Conn.

INARVIAEGO DIDUBING

Anaconda American Brass Company

Products and Ideas

Nuclear Gauges Speed

Process Control

NUCLEAR GAUGES, a laboratory curiosity a few years ago, are blooming into a useful everyday working tool.

For example, in Venezuela, a nuclear gauge on a huge, multiton dredge determines the amount of mud being pumped in the dredging of a river channel. In a plastics processing plant, another gauge determines just the right amount of plasticizer to be added to the mix. Food processors control the percentage of solids in tomato paste and measure and control the density of apple juice. Along a pipeline, one gauge rings an alarm when the proper time arrives for switching products. In other processing industries, nu-

clear gauges are making important savings. One firm says a gauge pays for itself each week. Another reports enough savings in forty hours of operation to pay for the installation. Considering the cost—from \$3000 up—these gauges are an important way to control production expenses.

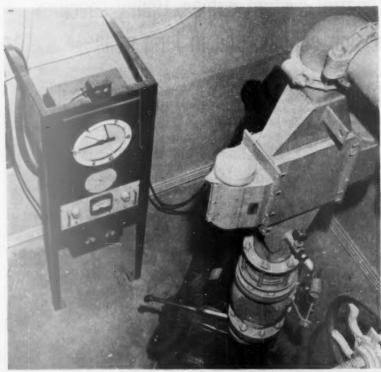
How do nuclear gauges work? Fundamentally, there's a radio-active source on one side of the pipe or container and a unique conversion cell on the other. This cell converts atomic energy to electrical energy with two electrodes surrounded by a gas. Radio-activity ionizes the gas, creating electricity between the two electrodes made of dissimilar metals.

A compensating cell analyzes the changes of specific gravities for a particular product. The electric current is then amplified and transmitted to recorder controllers achieving automatic control.

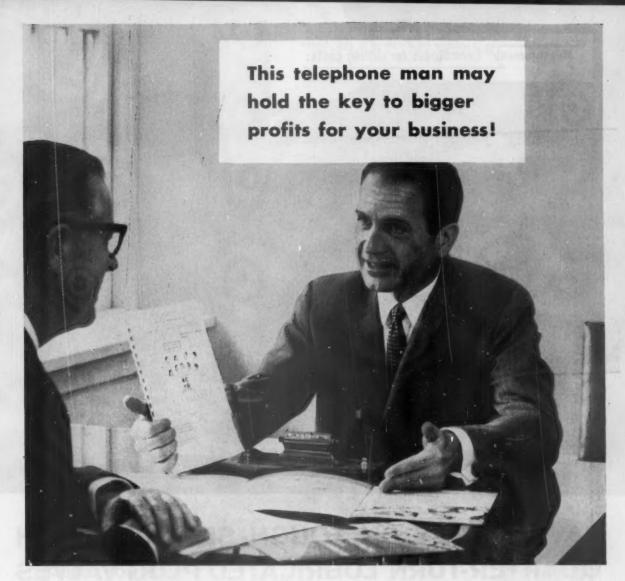
The Ohmart Corporation, Cincinnati, Ohio, uses this principle for operation of all its gauges and control systems. The company supplied gauges for use inside a coke drum, in a cement plant, on pipelines, and throughout other processing industries.

One appealing idea is the external location of the gauges. This eliminates measurement interference from temperature, pressure, viscosity, corrosion, abrasion, flow, and agglomeration. Moving

(Please turn to page 112)



The percentage of solids in raw sludge pumped from the settling tank in the sewage disposal plant is continually recorded by nuclear gauge mounted on pipe. Recorder is at left.



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If you need it-yes. He may end up merely showing you how to use the equipment you have to better advantage. But Bell System research has produced some outstanding new equipment and systems, such as the Call Director telephone at the right. If there's a place for them in your business-if they can definitely improve your operations and your profit picture-you'll want them.

"How can I meet with this man?"

Just call your Bell Telephone business office. The Communications Consultant will visit you at your convenience.



The new Call Director telephone, with Bell System intercom, lets you add other people to calls on your line, set up telephone conferences, hold calls-puts as many as 29 outside, extension or intercom lines at your fingertips. Thousands of firms already have it.

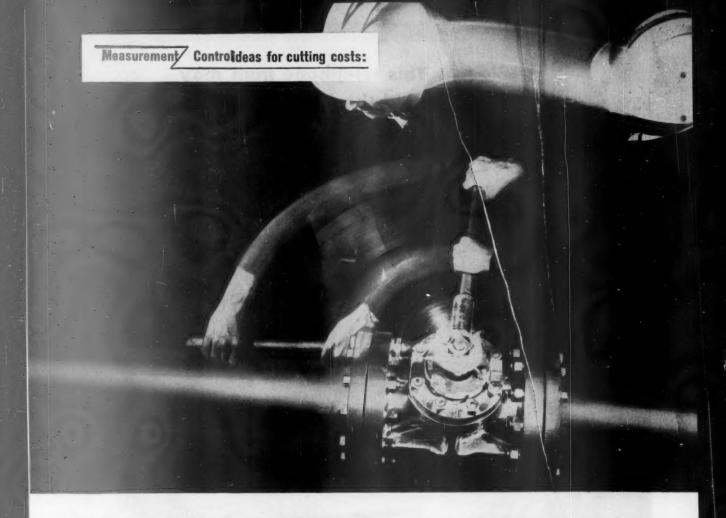
BELL TELEPHONE SYSTEM



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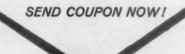
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There is hardly a plant of any kind—including yours—where the right application of the right measurement and control methods and equipment won't produce savings many times the modest cost involved. It will cost you nothing to have a Rockwell Field Engineer show you. Simply send the coupon below, now.



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Rockwell gas and liquid meters, properly applied, can improve quality control, sharpen cost control, and prevent waste in almost every plant department. A Rockwell Field Engineer can help you find where meters will cut costs . . . and Rockwell has a complete line of meters to measure practically anything that will flow through pipe.

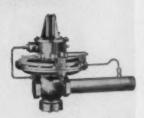




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More efficient control of all the material flowing through pipes in your plant is a positive step in cutting costs. There are new applications and new ideas for using gas pressure regulators and valves that will stop wasteful, inefficient, and dangerous handling of fuels, production fluids, and products. A Rockwell Field Engineer can show you where and how.





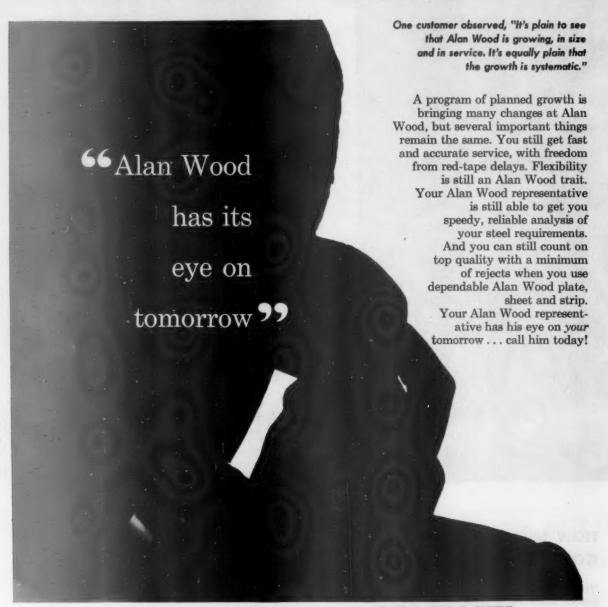
MEASUREMENT AND CONTROL DEVICES

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There's more to the car of tomorrow than just futuristic styling! Automotive engineers are working constantly to perfect com-pletely new power plants—like turbine engines—to achieve yet unheard of performance and economy! And they demand bear-ings that are as advanced as their thinking. This is no new challenge to Bower engineers. Their many original contribu-

tions have helped increase performance and reduce bearing failure to a minimum. If your product is one which requires advanced bearings today plus realistic planning for the future, call Bower. There's a complete line of tapered, straight, or journal roller bearings for every field of transportation and industry. Bower Roller Bearing Division, Detroit 14, Michigan.

DIVISION OF FEDERAL-MOGUL-BOWER BEARINGS, INC.

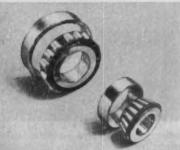
'ROUND-THE-CLOCK DEPENDABILITY is one reason why the petroleum industry specifies Bower roller bearings.

LEADING HEAVY EQUIPMENT MANUFACTURERS use Bower roller bearings—for long, efficient life under punishing loads.

REDUCE BEARING MAINTENANCE-Use Bower tapered







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Products

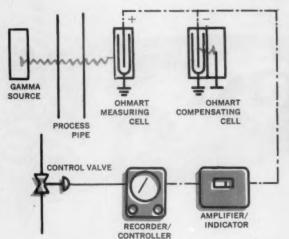
(Continued from page 106)

parts are lacking so the life of the gauge in unlimited and maintenance is at a minimum. Installation is simplified by fastening onto existing pipes and tanks. Usually no extensive modification of existing plant equipment is required.

Radiation sources used are cesium-137 and cobalt-60. Cesium-137 has a long half-life of 33 years and medium energy gamma radiation (.662 mev.) It's used where maximum instrument stability and sen-

sitivity are required.

Cobalt-60, with a half-life of 5.3 years and higher energy radiation (1.17 and 1.33 mev.), is used where penetration ability is more important than sensitivity and stability. Leakage of the radioactive source is prevented by double welding the source inside stainless steel capsules. A shielded source holder prevents personnel exposure to gamma radiation within the area. A top mounted knob makes it possible to rotate the radiation source inside to a closed position that is completely surrounded by lead for purposes of installation.



A typical nuclear gauge system detects flow in pipe by measuring density change in stream. At predetermined points, control valve is actuated.

A radioactive strip source has also been produced where radioactive material is evenly distributed along the length of the source. This can be almost any reasonable length. Stacking cells on top of one another produces a gauge to measure over a wider range as well as interface positions.

Putting the gauges into operation requires only two steps: calibration and checking.

Calibration is done by adjusting the compensating cell. This

emits a negative electrical charge, while the conversion cell produces a positive current. They are equalized at a known specific gravity for a zero meter reading.

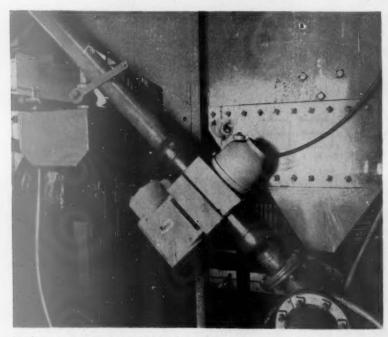
The calibration is checked by using two flat metal sheets. These absorb radiation equivalent to the controlled material at a given specific gravity. They are inserted between the measuring cell and radiation source with the container empty. One equals the empty container filled with a low specific gravity material and the other, a high specific gravity substance.

The same gauge can be applied to pipes ranging from 4 to 14 in. The signal current can be transmitted as far as 1000 feet to the amplifier. When amplified, the current can be transmitted any distance.

Although the operation of nuclear gauges depends upon gamma rays, proper control of radiation level insures complete safety. There is no danger to material in process.

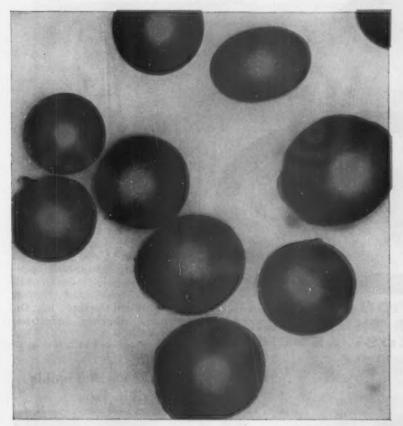
In processing baby food, nuclear gauges maintain low fat content by controlling the action of a centrifuge. In preparing condensed milk, for example, they maintain even concentration by controlling the rate of run-off from the evaporator. Nuclear gauges also control the melting process in sugar refining.

Careful shielding and construction protect operating personnel under all conditions. For hazardous atmospheres, explosion-proof housings can be provided.



Nuclear gauge on pipe measures the density of heavy media in coal flotation process, and keeps density at the proper level.

30 MILLION OF THESE JET-FORMED SPHERES IN EVERY INCH OF BEARING SURFACE!



JET PROCESS BLASTS MOLTEN ALLOY INTO UNIFORM PARTICLES ... so small

that thirty million will form a thin layer only one inch square! This sintered layer is the bearing surface of Federal-Mogul sleeve bearings.

Molten copper-lead, alloyed to exact specifications, is poured into a special inert-atmosphere reaction crucible. Here it's blasted by a high-speed fluid jet to form the dense powder shown at left.

Because of the uniform particle size of this powder, the bearing surface of each F-M copper-lead sleeve bearing has precisely the same alloy composition and high adhesion to the steel backing as every other F-M bearing of the same alloy type!

YOU CAN SEE THE CONSISTENT SIZE

in the photomicrograph. What you can't see is the consistent alloy composition which produces uniform bearing properties and performance in any alloy type.

Federal-Mogul makes engine bearings for every condition of speed and load. You can select from among five different sintered copper-lead alloys, all permanently bonded to precision-formed steel backing. Our Engineering Department is available to you for consultation or recommendations on bearing design and application. For more

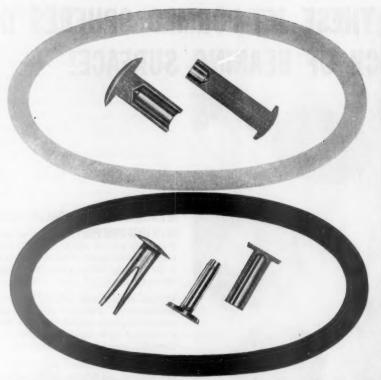
information, write Federal-Mogul Division, 11077 Shoemaker, Detroit 13, Michigan.



A COMPLETE LINE Steel backed bearings with a selection of many different alloys for virtually any bearing application—Plain and bimetal bushings in bronze, steel or aluminum, Precision thrust washers in solid bronze, or sintered alloys on steel (one or both faces). Rolled split spacer tubes in steel, aluminum or stainless.

FEDERAL-MOGUL

sleeve bearings bushings-spacers thrust washers DIVISION OF FEDERAL-MOGUL-BOWER BEARINGS, INC.



COST PREVENTION...NOT COST REDUCTION...IS THE EFFICIENT WAY TO LOW-COST ASSEMBLY



The "in-place" cost of a fastener is what really counts to cost-conscious purchasing executives. By deciding on inexpensive Milford tubular rivets as a fastening method and installing them with Milford automatic rivet-setting machines, design and production engineers are eliminating costs at the initial production stage rather than trying to reduce costs later at the assembly line.

You can find out more about Milford's cost-cutting ideas by asking your Milford Representative to show you Milford's new Manual of Modern Riveting Practice. It's crammed with valuable cost-cutting tips and technical data that can be quickly translated

into dollars on your production line.



MILFORD RIVET & MACHINE CO.

MILFORD, CONNECTICUT . NORWALK, CALIFORNIA ELYRIA, OHIO . AURORA, ILLINOIS . HATBORO, PA

For More Information Write No. 211 on Place Mark Card-Page 32

Products

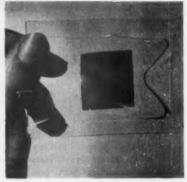
Bag Dumper Is For Industrial Use



The dumping of bagged material is made easy with a bag dumper that handles bags of all types—burlap, multiwall, openmesh, cotton, polyethylene as well as other textiles and plastics. Conveyors and Dumpers, Inc., Division of Mercury Industries, Hillsdale, N. J.

Write No. 18 on Place Mark Card-Page 32

Machine Packs Liquids In Flexible Film



A high-speed packaging machine will insert a rigid object or liquid in a flexible film package and seal it all in one operation. Handipak offers manufacturers in various fields an inexpensive disposable unit package for an object immersed in liquid. It is ideally suited for sampling or market testing. Packaging Services, Inc., Madison & Beech Streets, Wilmington 99, Del.

Write No. 19 on Place Mark Card-Page 32



NEW POLYPHONIC ANALYZER

probes ball bearing noise in electric motors

In the double-celled acoustic chamber above, electric motor bearings are analyzed under operational conditions. An electric motor is run inside the split, acoustically-insulated chamber. In each cell, sound from the running motor is picked up by sensitive microphones, measured for noise level, then tape-recorded stereophonically. When the stereo tapes are played back and analyzed for frequency content, it's possible to pinpoint the cause and source of noise in a motor, and to eliminate it through design changes in either the bearings or the motor itself.

This BCA-developed bearing research tool is being used to test bearings . . . evaluate bearing lubricant formulations . . . check the value of varying metal combinations . . . determine ideal surface finish and contour of bearing raceways and balls.

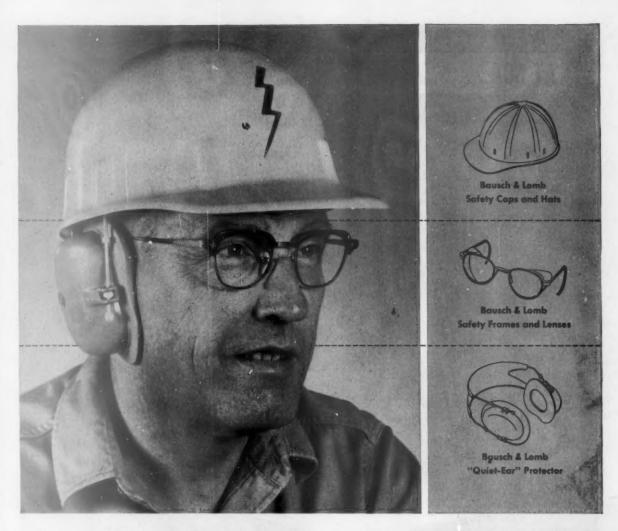
In the Temperature-Humidity-Controlled Instrumentation Room at BCA, this and other specially designed devices test BCA bearings for use under conditions often identical to operating conditions specified by the customer. The result: BCA bearings which meet or exceed performance specifications on the equipment for which they are designed.

There's a complete BCA line of ball bearing sizes and types for almost every kind of industry . . . automotive, earthmoving, agricultural, for example. This, plus BCA's extensive new research, testing and production facilities, assure bearing users of a dependable source of durable ball bearings to meet almost any need. For information, write Bearings Company of America, Division of Federal-Mogul-Bower Bearings, Inc., Lancaster, Pa.

OF AMERICA



DIVISION OF
FEDERAL-MOGUL-BOWER
BEARINGS, INC.



WHAT THE WELL-PROTECTED HEAD WILL WEAR ... Protection-PLUS safety coordinates by Bausch & Lomb

Protection plus economy!

You'll save on the longer life of B&L safety products—and on the accidents they prevent. That's because we build an extra margin of safety into them. Bal-SAFE lenses, for example, average 14 times the impact-resistance required by government standards. Yet you pay no more for the extra protection of B&L.

Protection plus worker acceptance!

It stands to reason that B&L has the edge in designing comfortable fit and smart appearance into safety products. Because we've been meeting the critical demands of the ophthalmic professions for over a hundred years. We know head shapes and fitting procedures. The pro-

For More Information Write No. 213 on Place Mark Card-Page 32

tection is in the wearing—and workers wear B&L safety products because they fit right and they look good.

Find out how on-the-job interchangeability lets you fit all your workers, for all job hazards, from a minimum inventory. And see how readily B&L safety products are accepted... and worn! Call your supplier, or write: Bausch & Lomb Incorporated, 90610 Lomb Park, Rochester 2, New York.



Protection PLUS Safety Products

protection + economy + worker acceptance

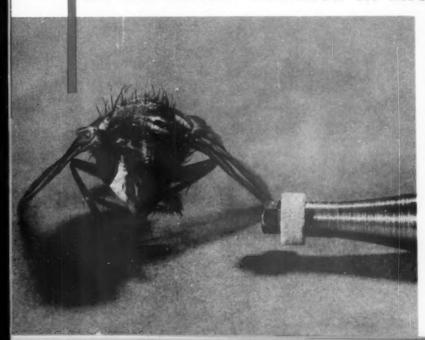
For More Information about ad on facing page
Write No. 214 on Place Mark Card—page 32→
PURCHASING

Progress Report on



Bay State Reports:

AN IMPORTANT ADVANCE IN MICRO-MINIATURIZATION

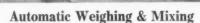


Tiny Grinding Wheels Developed for Delicate Tasks

Key feature in the development of this micro-miniature grinding wheel is its interchangeability. Previous ultra-small wheels had to be bonded permanently to a tool shaft. Bay State developed entirely new manufacturing techniques and produced true wheels which could withstand the strains set up when such a wheel is clamped to its shaft with a retaining nut. Special abrasive grit combinations were also developed to give superior finishes. In addition to substantially lower wheel costs, users have saved a considerable amount of set-up time during wheel changes in such operations as turning out micro-miniature ball-bearing races for high-speed cameras, tape recorders, missile guidance systems, etc.

On many larger diameter bores and races, Bay State's precision-mounted wheels, made in the conventional manner, continue in high demand due to their excellent performance.

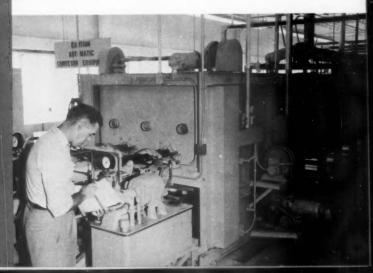




Weighing abrasive and bonding materials is a tricky business when it's done by hand. Yet consistent performance depends on accurate proportioning of all ingredients. That's why Bay State's ultra-modern automatic weighing and mixing equipment is such an important step forward in abrasive technology. Here, operator Richard Donovan (left) inserts a punched card in the control console which will make a completely automatic series of abrasive-grain weighing operations. Above, Donovan checks a bondweighing cycle after setting it up on the console behind him. In the foreground is a high-speed mixer fed by chute from the automatic weighing equipment on the floor above. The accuracy and speed of this equipment enables Bay State to keep costs down and provide amazingly precise duplication of wheel specifications.

180 Feet of Controlled Super-Heat

This is the ultimate in automatic kilns. Even the chemical composition of the atmosphere inside it is controlled by an exothermic gas generator which maintains exactly the atmosphere that best suits the formula of the honing stones and other abrasive products being fired. Electric heating elements provide constant, even heat (maximum is about 2350°F) without contaminating the atmosphere with unwanted by products of combustion. Electronic controls are housed in a special air-conditioned room. Automatic feeding machinery delivers the abrasive products to powerful, hydraulic rams which give a 7000 lb. push and keep the production line moving through the kiln at a constant speed. Associate Laboratory Engineer Bill McMahon is shown here checking gauge readings. checking gauge readings



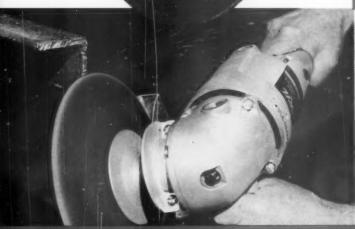




Bay State Reports:

IMPROVED PERFORMANCE IN WELD-GRINDING THROUGH IMPROVED DESIGN

Bay State's new "Koolie Hat" portable grinding wheel cuts easier, safer and faster than any comparable wheel on the market. It shape enables it to be held at a shallow (4° to 5°) angle so that operators work in a relaxed posture... are less prone to accidents caused by fatigue. The shape also ensures uniform wear on the periphery of the wheel so that thickness remains constant and only the wheel's diameter decreases... and the danger of shattering is virtually eliminated. Narrow radial contact area also ensures more uniformly high cutting speeds and prevents cracking due to heat build-up.





Bay State Reports: BETTER SERVICE

TO CUSTOMERS THROUGH PRE-PACKAGING

Inventory control is greatly simplified for users and distributors, both, by pre-packaging of wheels in quantities that make logical units of supply for given types of grinding operations. Counting and handling time are reduced and such products as tool room, internal grinding, reinforced and mounted wheels can be supplied in their own protective packages. New packaging materials provide better protection than ever against dirt and breakage.







Bay State Reports:

ULTRA-THIN DIGING AND WAFERING WHEELS FOR THE ELECTRONICS TRADE

These wheels are the real glamour queens of the abrasive industry. Their metal-bonded, diamond abrasive grit cues through hard crystals of Quartz, Germanium and Silican like a knife through well-aged cheddar. The wheels themselves are literally paper-thin (as thin as .006" to be exact!) so that they slice these valuable, electronic, semi-conductor materials with an absolute minimum of waste. Yet, these micro-thin blades are rigid they cut with the utmost precision. Extra-deep diamond sections ensure maintenant mum smoothness of finish and extra economy in terms of prolonged blade life. Bay State is now ideally situated to supply all of the great electronics manufacturing areas in the U.S.



Bay State Reports:

HIGH PERFORMANCE ABRASIVE PRODUCTS FOR THE STONE TRADE

There's nothing miniature about Bay State's diamond wheels for the stone trade. They're big, rugged brutes that slice through granite, marble, flagstone, quartzite and slate almost as easily as they do through sandstone, soapstone and the other softer minerals. Bay State also furnishes wheels and special shaped abrasive stones to fit all standard machines used for smoothing and finishing granite, marble and other types of stone. In each case Bay State develops the product for maximum cutting speed, precision and durability, resulting in the lowest cost perfoct of cutting. Incidentally, with its greatly expanded diamond wheel facilities, Bay State is now one of the largest producers of diamond wheels in the abrasives industry.



BAY STATE ABRASIVES

Bay State Abrasive Products Co., Westboro, Massachusetts.

In Canada: Bay State Abrasive Products Co., (Canada) Ltd., Brantford, Ontario.

Branch Offices: Chicago, Cleveland, Detroit, Los Angeles, Pittsburgh. Distributors: All principal cities.

Products

Self-Lighting Grease Gun Cuts Waste, Saves Time



An automatic, self-lighting high pressure grease gun is designed to save time and reduce waste in lubricating unlighted equipment. Light of compact, lightweight one-piece gun operates on improved flashlight batteries at finger pressure. Eight in. nozzle brings hard-to-reach spots closer. LubriLite Corp., Libby, Mont.

Write No. 20 on Place Mark Card-Page 32

Marker-Counter Speeds Inventory Taking



A counter which drastically reduces work hours counts and identifies bar-stock, boxes, tubing, assemblies, etc., accurately and quickly. Each time unit touches a piece of material, pen tip leaves a small spot of ink in any of five colors, and counter clicks once. Mark provides ready identification of each item counted, thus preventing loss of count when interrupted, and up-to-the-minute total is always available. Van D. Mark, Production and Inventory Controls, P. O. Box 44, St. Clair, Mich.

Write No. 21 on Place Mark Card—Page 32

For More Information Write No. 215 on Place Mark Card—Page 32→ Harper produces over 100 alloys to "thread the needle" in meeting your specific corrosion-resistant needs



MODERN MAINTENANCE



R. L. Kirkpatrick, Manager, Maintenance Sales, Westinghouse Electric Corporation

IS PROFITABLE MAINTENANCE

What Do Your Maintenance Dollars Buy? Repairs Only...or Research Advances As Well?

Repaired equipment often beats its original performance. Why? Because large manufacturers like Westinghouse pass on to you the latest equipment improvements sparked by their research dollars. They make sure that repair facilities have engineering and quality control in depth.

If you judge solely on the basis of your repair bill, you may never know that your maintenance dollars could also include research advances. You can get radically new components, materials and techniques for your repair dollars that will lengthen operating life and cut your maintenance costs.

Building-in the findings of research means that your equipment is more than just repaired—it is modernized for maximum performance. This often means that your equipment can be rebuilt to work even better than when it was new. The latest advances in tech-

Westinghouse rebuilds "hopeless" motor

Repairs Save Customer Both Time and Money

It was a mess—this 720-hp motor serving a large steel company. Shaft shot. Armature damaged. Commutator gouged. Windings sprayed all around.

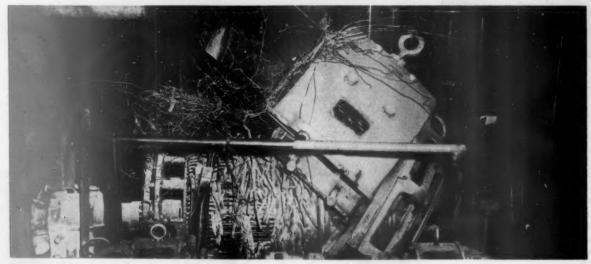
The accident occurred when a circuit breaker serving the motor

jammed mechanically—failing to open when the motor lost its field.

Westinghouse maintenance experts from the St. Louis Repair Plant checked the motor carefully, decided that although the damage was extensive the motor could be economically rebuilt and put back in service in less time than replacement by a new motor. Mean-

time, a new Westinghouse motor, similar rating, recently delivered for a new mill, was pressed into temporary service to minimize down-time losses.

Westinghouse restored the motor to first class operating condition. Time required—a short 14 weeks. Savings to customer—estimated \$11,000.



BEFORE: This sight greeted Westinghouse service engineers—a motor that apparently would never run again.

nology and engineering are incorporated in the maintenance service you receive—because large manufacturers are interested in your business in total, not just the immediate job on hand. They know that service and integrity go together—whether you buy new apparatus or need specialized service to maintain production equipment. It is imperative that they give you the latest, most modern and most reliable equipment.

Millions of dollars are spent annually to solve equipment operating problems—to keep your equipment more reliable and on line with minimum down time. The tortuous testing of hundreds of materials (including devising the tests themselves) is constantly going on, to search for better materials and more economical ways to answer industry's needs.

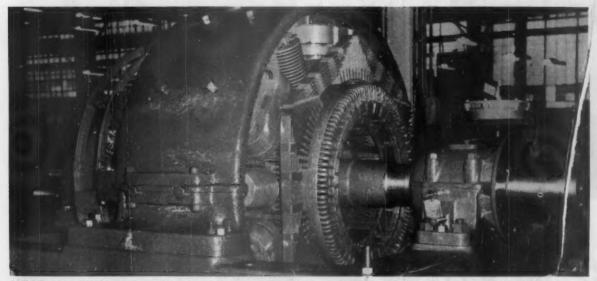
Research often starts with maintenance because severe operating conditions put equipment to the supreme test. There is great advantage in working with a company experienced in solving problems under the many different conditions and in locations where they occur—even internationally. Knowledge gained in solving a particular maintenance problem becomes part of the sum total of experience that is applied to solving problems in any industry. It

also leads to new products or equipment innovations that eliminate similar difficulties in the future.

A regular, planned schedule of modernization and repair—carried on in cooperation with a company such as Westinghouse—assures you of receiving the benefits of their research. Your equipment comes back to you with extended life that cuts maintenance costs . . . to help keep you producing profitably.

This is one of a series of Westinghouse articles on profitable maintenance practices.

—makes it better than when new



AFTER: The 720-hp motor, rebuilt and modernized by Westinghouse craftsmen, is now ready to go back on the line.

Westinghouse Maintenance Services —a Phone Call Away

Wherever you are, Westinghouse Maintenance Service is nearby, ready to work with you in the repair and modernization of your equipment—around the clock if necessary. In any industrial area of the country, you'll find West-

inghouse Repair Plants, Renewal Parts Warehouses and Field Engineering Offices.

Your Westinghouse representative will show you how this fast, dependable, money-saving service can expedite your modernization and repair schedule... and he will assist you in setting up such a schedule. Call him . . . or write Westinghouse Electric Corporation, P.O. Box 868, Pittsburgh 30, Pa. You can be sure . . . if it's Westinghouse.

Westinghouse





Products

FHP Electronic Drive Features Low Cost



A static adjustable speed drive can be used in many applications previously considered unsuitable for electronic drives because of cost, size or performance limitations. Fractional hp device is low in cost, compact and efficient. Shock and vibration resistant drive can operate under extreme environmental conditions with minimum maintenance. Available in standard ratings from 1/20 to 3/4 hp, unit has standard speed range of 8:1. For intermittent duty it may be operated over much wider range. Designed for use on 115 volt, 50/60 cycle, single phase power supply, it may be operated from any standard voltage with suitable transformer. General Electric, Schenectady 5, N. Y.

Write No. 22 on Place Mark Card-Page 32

Polyethylene-Paper Bags Resist Moisture



Moisture-resistant multiwall shipping sacks feature polyethylene and paper construction at low cost. Multiwall structure includes a separate, intermediate ply (not a liner) of lightweight sheet polyethylene, spot-pasted at top and bottom to adjacent layers of heavy-duty kraft paper. As polyethylene is not next to contents it is protected from abrasion. Polyethylene provides moisture barrier of great flexibility even at extremely low temperatures. Standard sizes are 25, 50 and 100 lbs. with either sewnopen mouth or sewn-valve closure. Chase Bag Co., 355 Lexington Ave., New York 17, N. Y. Write No. 23 on Place Mark Card-Page 32

Retaining Ring Pliers Have Hardened Tips



A line of pliers for applying and removing internal and external retaining rings are made of black-finished carbon spring steel with induction-hardened tips to grip ring lugs securely yet readily release rings after application or removal. Standard pliers feature an adjustable stop and a music-wire spring to save time on repetitive ring application and removal. The adjustable stop and spring also prevents overspreading of external rings. A thumbscrew adjusts the plier opening to the ring size and a locking nut locks its position to assure a precise opening every time. The lower-priced economy pliers are made of the same steel but do not have adjustable stop and spring and are recommended for nonrepetitive operations. All pliers accommodate several ring sizes and are available with straight tips or angle tips. Industrial Retaining Ring Co., 57 Cordier St., Irvington, N. J. Write No. 24 on Place Mark Card-Page 32

ready supplying thin strip non-ferrous industry, oadest range of dimen 6

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Somers

Brass Company, Inc

128

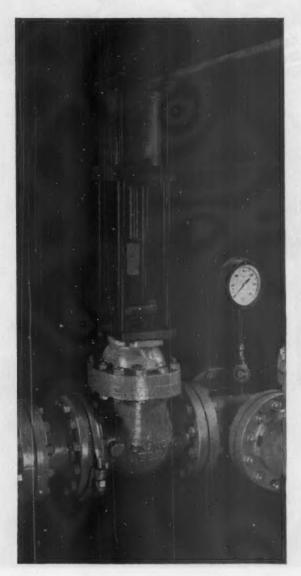
Baldwin

Ave.



... a fast-moving program of planned expansion, product development, and streamlined distribution to help our customers meet the competitive challenges of the Sixties.

NEW CRANE CYLINDER OPERATORS— LOW-COST POWER OPERATION FOR GATE VALVES



Now you can control any flow process easier and faster with cylinder operated Crane valves. Large valves... valves in remote or inaccessible locations... valves that must be cycled many times a day...all these can now be operated at the touch of a finger, saving time and manpower. These benefits of power operation are available from Crane now—at lower cost and in less time than ever before!

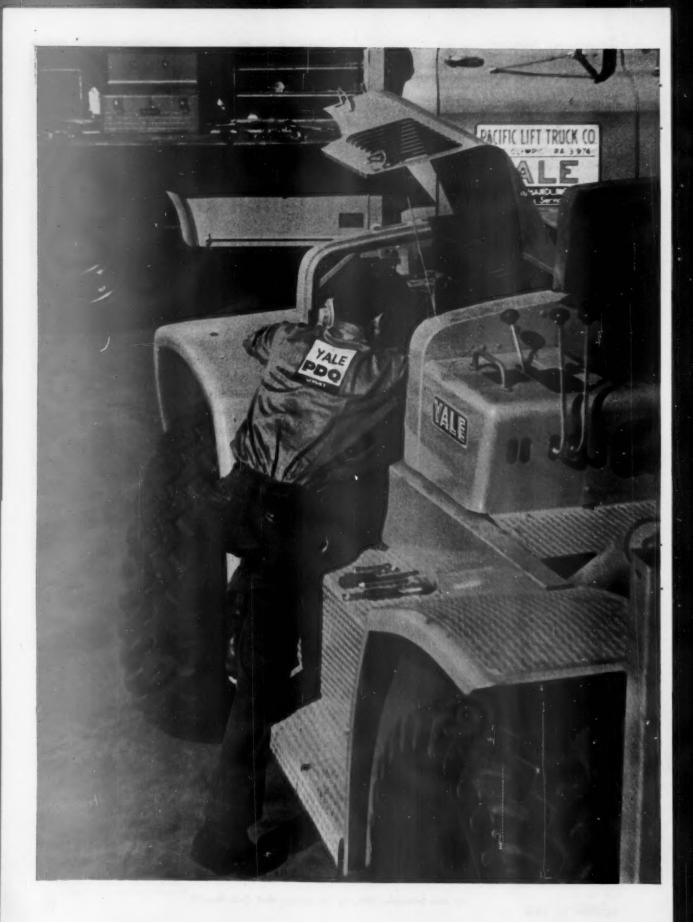
Crane cylinder operators are available for Crane O. S. & Y. iron body wedge and double-disc gate valves, and for pulp stock valves. Control devices for local or remote actuation supplied at extra cost.

And you can get these new operators for modernization of your present Crane gate valves, too. Easy-to-install adapter is shipped with every cylinder. Field installation can be done in 30 minutes or less, without removing the valve from the line.

This new valve operator is another example of how Crane solves your flow problems more economically, more productively. The Crane solution—the right answer to your flow problems—is as close as a phone call to your Crane distributor. Call him today.



CRANE CO., INDUSTRIAL PRODUCTS GROUP 4100 S. Kedzie Avenue, Chicage 32, Illinois Valves • Electronic Controls • Piping • Plumbing Heating • Air Conditioning • Cyclotherm® Boilers • Heat Exchangers • Marine Products • Powdered Metals



Just what do you get from Yale PDQ* Service?

Yale PDQ Service is a concept that starts with equipment designed to require the minimum of service. At the same time it recognizes, realistically, that prolonged useage of any equipment inevitably will call for service. When such service is required the Yale program provides PDQ service with factory approved facilities, teams of mechanics, comprehensive manuals and a system of dispatching spare parts quickly to any corner of the country.

Q. How does the Yale PDQ Service operate?

A. Through "teams" of technicians, assigned to various functions. Some "teams" operate at the Yale factories, handling manufacturing and engineering assignments. Others are the task forces that operate in the field and come in direct contact with you.

Q. How well are the field teams technically qualified to service my equipment?

A. The teams consist of carefully picked men—factory trained. They operate in the field under the careful surveillance of experienced regional and district supervisors operating out of modern, fully equipped facilities.

Q. Are Yale PDQ Service teams in reality nothing more than rescue squads to meet emergencies?

A. Far from it. One of their important functions is "operational maintenance" which means preventing costly downtime of equipment before it occurs. Also, the field service teams are the ears and eyes for Yale engineering and production. They report on the performance of Yale equipment in customers' plants.

Q. How do I get replacement parts quickly for Yale equipment under PDQ service?

A. Replacement parts are main-

tained at depots in the East, Midwest, and Far West. From these depots, replacement parts are distributed to the network of Yale branches and dealers who carry stocks for immediate delivery.

Q. Do Yale Branches and Franchised Dealers carry every possible replacement part a customer might need?

A. No. But they do carry stocks of parts based on the frequency of demand by customers in the area. Furthermore, they anticipate these demands and stock accordingly. Under a system of centralized electronic data processing the inventories of all replacement parts are kept under instantaneous control. The memory of the electronic computer indicates where parts are shipped, availability by location, rate of depletions from stock, etc.

Q. So what?

A. So, when you request a replacement part which is not in stock in your immediate area, it takes only a few minutes to locate its whereabouts throughout the country and arrange for quick shipment to you.

Q. Are replacement parts obtainable for all Yale equipment regardless of age?

A. Yes. This is a particular feature of the Yale PDQ Service. Replacements are obtainable for *all* equipment—new or old. Replacement parts for equipment designed for specific applications for which parts are not standard and for very old equipment naturally must be produced on special order.

Q. Where do I get Yale PDQ Service teams when I need them?

A. The Yale PDQ Service is available in all important industrial areas throughout the United States and Canada (see your Yellow Pages). In addition, all PDQ service centers maintain service shops on wheels manned by factory trained mechanics.

Q. Where can I get further information about Yale PDQ Service?

A. Write to your Yale representative or to the Yale & Towne Manufacturing Company, Materials Handling Division, Philadelphia 15, Pa., Dept. X-006.

*Performance — Dependability — Quality

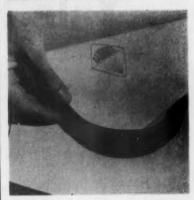
Yale Materials Handling Division, a division of the Yale & Towne Manufacturing Company. Manufacturing Plants: Philadelphia, Pa., Forrest City, Ark.



NEW EVIDENCE NEW EVIDENCE

Products

Packaging Papers Inhibit Corrosion



Volatile corrosion inhibitor papers guarantee positive protection for non-ferrous metals. Packaging papers are sulfur-free and inhibit oxidation. They actively prevent tarnishing of copper, brass, bronze and cadmium for several years. Actual contact with wrapped surfaces or tight seal is not required. Volatile protectant does not affect subsequent operations such as soldering, brazing, or plating. Papers come in a variety of weights and finishes, in widths up to 60 in. and in sheets or continuous rolls. Daubert Chemical Co., 4700 S. Central Ave., Chicago, Ill.

Write No. 25 on Place Mark Card-Page 32

Coated Foundry Sand Makes Stronger Cores



Foundries can now receive quick delivery on orders for resin coated sand, used to produce economical high strength shells or cores. Sand offers four outstanding advantages: grains have uniform coating; sand develops higher tensile and hot strength; melting point can be advanced to required degree without extensive mixing and mulling; no residual solvents are trapped in the resin to create lumping sand condition and prevent free flow. Standard melt point for resin coated sand is 200-250 degrees F., giving high tensile strength in shell and core. Sand with different melt points may be ordered where unusual conditions exist. A lubricant is incorporated to provide easier release from pattern; in many cases no additional spraying of patterns is necessary. Bennett-Ireland, Inc., 56 Exchange St., Norwich, N. Y. Write No. 26 on Place Mark Card-Page 32

Machinery Mountings Check Vibration



Effective isolation of vibration caused by machinery with operating speeds and disturbing frequencies of 350 cycles per minute and higher is assured by a series of mountings with average static deflections of 1 in. Designed for applications where horizontal thrust is not severe, four types offer choice of load capacities from 25 to 15,600 lbs. Mountings consist of telescoping cast steel housings containing 1 to 12 alloy steel springs. Neoprene sponge stabilizers provide lateral control without binding. Use of nonskid corrugated neoprene pads bonded to mounting base plate eliminates bolting machinery to floor. Vibration Mountings, Inc., 98-15 50th Ave., Corona 68, N. Y. Write No. 27 on Place Mark Card-Page 32

> For More Information Write No. 22) on Place Mark Card—Page 32→



Products

Money Saving Drum Serves Small-Volume Buyer



A miniature drum makes it possible for small-volume purchasers of building maintenance supplies to buy waxes, finishes and cleaners at quantity prices. Small size drum holds 12 gallons and comes equipped with heavy-duty drum

cradle for easy storage in crowded area. Non-spill pouring spout eliminates leaky spigots and prevents waste. Service Products Div., Johnson's Wax, S. C. Johnson & Son, Inc., Racine, Wisc. Write No. 28 on Place Mark Card—Page 32

Nylon in Rods, Tubes Bars and Plates

Nylon in rods, tubes, tubular bars, plates and pressure tubing has been added to a long-established line of cast bronze, sintered metals and aluminum in the field of bearings and special parts. Nylon resists wear, abrasion, impact and fatigue, and offers outstanding tensile strength, self-lubricating properties and great embedability. It is easily machined from bars, tubes or plates, and has many uses as power transmission, and food machine parts. Bunting Brass and Bronze Co., 717 Spencer St., Toledo 1, Ohio.

Write No. 29 on Place Mark Card-Page 32

Economical Multicolor Printing on Corrugated



A new process makes economical multicolor printing on corrugated board possible. System applies as many as 12 matched colors, with plate cost the same as for a set of two-color plates and the printing cost only moderately more. Use of extra color is ideal for color coding or special promotions on combination shipper-display cartons. The Mead Corp., Dayton, Ohio.

Write No. 30 on Place Mark Card-Page 32

SEAM-WELDING WHEELS THAT...

LAST LONGER

Users report AMPCO-WELD® Seam-Welding Wheels running up to 1½ times longer than ordinary wheels. Made of durable Ampco alloys, Ampco-Weld wheels have (1) unusual hardness and retention of toughness at elevated temperatures; (2) exceptional resistance to wear; (3) extra durability; (4) high electrical conductivity, Your Ampco-Weld distributor can supply rough forged blanks from stock—and can give early delivery on wheels machined to your specifications.

Write for catalog, price list, and name of your distributor.

AMPCO METAL, INC.

Department 377J, MILWAUKEE 1, WISCONSIN WEST COAST DIV.: Huntington Park, California SOUTHWEST: Garland (Dallas County), Texas

For More Information Write No. 221 on Place Mark Card-Page 32

BECAUSE

of continuing demand we are making available a limited number of copies of the 1959 Value Analysis issue at the special discount price of 50¢ each.

The issue contains specific practical instructions on how to analyze values in component parts, materials, M.R.O. supplies, office equipment, etc.

> SEND US YOUR ORDER TODAY

TYLER service offers 53,000 ways to cut screening costs

To meet all the different requirements for sizing, grading, and separating materials, W. S. Tyler has developed wire cloth in innumerable types, sizes, metals, meshes, and designs. Today, over 53,000 different specifications are available.

Matching the *right* wire cloth to your specific needs is the service provided by your Tyler sales engineer. From Tyler's unequalled range of product he has the know-how and experience to give you results.

That's Tyler Screening Service—use it to cut your production costs.



WOVEN WIRE SCREENS . SCREENING MACHINERY . TESTING SIEVE EQUIPMENT

The W. S. TYLER Company · Cleveland 14, Ohio

OFFICES: New York • Chicago • Boston • Philadelphia • Atlanta
Dallas • Los Angeles • San Francisco • Baltimore • Birmingham • Houston • Minneapolis
Pittsburgh • Salt Lake City • The W. S. Tyler Company of Canada, Limited,
St. Catharines, Ontario • OFFICE: Montreal

HHHHH

THE AMPLEXOLOGIST





The Amplexologist has a high regard for prospective customers' blueprints. He finds it necessary upon occasion, however, to put them respectfully aside. Especially when he's told: "We tried to make this part out of powder metal a couple of years ago but the supplier couldn't meet our specs."

The Amplexologist, you see, has heard this song before. That's why he puts down the prints and picks up the part. And starts probing.

What does this part have to do? Under what conditions? Any special strains? Impact? Where? What about the configuration? Is this contour functional? Are these sharp angles necessary?

Often as not, the answers to these questions hit pay dirt. They usually reveal, in fact, that with a little redesigning another "impossible" part can, after all, be made better and cheaper through advanced powder metallurgy (i.e. Amplexology).

We're happy to say that most manufacturers are eager to eat their own specifications anytime they can save thousands of dollars and still maintain (or improve) quality. Their willing appetite has helped make us the world's largest and most experienced producer of powder metal parts. One more reason why manufacturers say, When it comes to powder metallurgy—Amplex has the answer.



A LITTLE RE-DESIGNING ...

The part shown is an engine fan-pulley hub. It was formerly a solid circular casting. The manufacturer had to machine the face, bore the ID, drill and tap four holes. The Amplexologist re-designed the hub into its present cloverleaf shape—to reduce weight and cost of material. It is now being produced by powder metallurgy as a finished precision part that requires no machining—except tapping the holes. Total savings about 33%.



SEND COUPON . . . if you'd like to talk over your product with the Amplexelogist. Don't hasitate. He's always happy to get out of the office.

AMPLEX

DIVISION CHRYSLER CORP.



AMPLEX DIVISION • CHRYSLER CORP. • Dept. P16
P.O. Box 2718 • DETROIT 31, MICH.

Please have the Amplexologist call to look into the possibility of using powder metal parts in our product.

NAME

COMPANY.

ADDRESS.

CITY__

STATE

PRODUCT.



YOU CAN DO BETTER WITH



STAMPING



Our customers are known for the quality of their products, and have associated themselves with us to maintain those high quality standards. We have been successful in doing just that for 45 years. If your products require the same high quality standards: it's time you checked what De-Sta-Co has to offer. Better your product—better your profits—better do it now!





For More Information Write No. 224 on Place Mark Card—Page 32

Products

Easy-Opening Tape Is Strong and Durable



A reinforced sealing tape is particularly designed to open fibre boxes easily without the use of tear strings or rip cords. Tape is durable and can be rapidly stripped from the box, permitting multiple reclosing and reusability. Atlantic Gummed Paper Corp., 1 Main St., Brooklyn 1, N. Y. Write No. 31 on Place Mark Card—Page 32

Ultrasonic Grinder Has Air-Cooled Transducer



A faster-operating ultrasonic impact grinder can machine an area up to 1% in. in diameter. Unit is especially designed for precision machining operation in manufacture of semiconductor and other electronic devices and can also be used for general purpose work, including cleaning and soldering. Grinder features air-cooled, 300-watt magnetostrictive transducer, which eliminates down-time for cooling, and makes bothersome plumbing arrangements unnecessary. Raytheon Co., Commercial Apparatus & Systems Div., 1415 Providence Turnpike, Norwood, Mass.

Write No. 32 on Place Mark Card—Page 32



YOU CAN DO BETTER WITH



STAMPING EXPERIENCE



Pictured above is a section of our raw stock storage—ton upon ton of strips, coils and sheets in many gages that over 45 years of STAMPING EXPERIENCE has proved necessary to meet the widest possible customer demands!

The same EXPERIENCE is evident in every section of our plant—EXPERIENCE that assures fast, sure delivery of the exact stamping you need, in any quantity and maximum quality.

It will pay you to investigate!



For More Information about ad on facing page Write No. 255 on Place Mark Card—pg. 32→ Purchasing



appearances are not deceiving

THIS U/L LISTED RELAY IS AS RELIABLE AS IT LOOKS

This AB relay looks rugged . . . and it is. When "specs" call for 10 amp switching, check the AB and you can confidently expect a minimum of 100,000 cycles.

. . . And it's compact, easily mounted, does not require special

handling. Installation is simple, with either screw terminals (adapters), quick disconnects, or dip soldering.

Designers specify the AB for air conditioners and other products where dependable, continual service is paramount.

These standard AB and ABC relays are listed by Underwriters' Laboratories and Canadian Standards Association:

Type Arrangements
AB7AY DPST-NO
AB8AY DPST-NC
AB11AY DPDT ABC7AY DPST-NO ABC8AY DPST-NC ABC11AY DPDT

Coil veltages: 6, 12, 24, 115 and 230 volts AC, 50/60 cycle. Contact rating 10 amps, 115 volts AC or 5 amps, 230 volts AC noninductive.

U/L File E-29244 CSA No. 15734

Write for complete data or contact your nearest P&B sales engineer.

AB AND ABC RELAYS ENGINEERING DATA

GENERAL:
Insulation Resistance: 100 megohms minimum.
Ufe: 3 million cycles (mechanical).
Breakdown Vertage: 1300 volts rms between
all elements and ground.
Tampurature Range: DC: —55 to +45°C.
Tampurature Range: DC: —55 to +45°C.
Tampurature Range: ABC—7 ozs.
Tamminals: Fit ¼" quick-connect terminals,
or may be applied to printed circuits
using dip soldering. Screw adapters
furnished on request.
Enclosure: ABC. Heavy duty dust cover.
Dimensions: 11¼4" x 27½2" x 2½2".

CONTACTS:

Arrangaments: DPDT Material: ¼" dia. silver. Other materials available.
Lead: 5 amps at 230 volts AC or 10 amps at 115 volts AC noninductive.
10 amps at 28 volts DC.

Veltage: DC: 6 to 110 volts. AC: 6 to 230 volts.

Power: DC: 2 watts nominal.

AC: 6.4 volt-amps.

Resistance: 35,000 ohms max.

Duty: Continuous: DC coils will withstand 6 watts at +25°C.

MOUNTINGS:

AB: Two 8-32 tapped holes on 1½" centers.
ABC: One 8-32 stud ½" long and locating tab.

P& B STANDARD RELAYS ARE AVAILABLE AT YOUR LOCAL ELECTRONIC PARTS DISTRIBUTOR



ABC Series-AB series can lie supplied enclosed in sturdy metal dust cover, 121/44" x 225/12" x 23/12".

DIVISION OF AMERICAN MACHINE & FOUNDRY COMPANY, PRINCETON, INDIANA IN CANADA: POTTER & BRUMFIELD CANADA LTD., GUELPH, ONTARIO

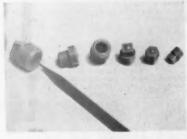
Products

Can-Lifter Magnet Speeds Materials Handling



A permanent magnet is designed for lifting cans and other light materials. A manual discharge mechanism releases the load. The unit shown measures 18"x20" and contains Indox ceramic permanent magnets which provide the magnetic power. The magnet can remove cans from cartons and place them on convevor belts for further processing. Magnets are made in sizes and shapes to conform to various sizes of containers, conveyor belts, etc. Because unit uses permanent magnet can remove cans from expense, no danger from power failure, and no maintenance cost. Sterns Magnetic Products, 635 S. 28th Street, Milwaukee 46, Wis. Write No. 33 on Place Mark Card-Page 32

Pipe Plugs Seal Without Compound



A lightweight pipe plug made of Du Pont Delrin seals tightly without sealing compound and will not loosen under severe vibration. Plugs are usable with all types of organic fluids, with primary applications in compressors,

pumps, air conditioners, etc. They are available in 1/8, 1/4, 3/8 and 1/2 in. sizes in square heads, and 1/8 and 1/4 in. sizes in hex heads. Hollow design inside plug increases sealing ability, because plug threads are forced together against mating threads of the hole as pressure increases. Plugs have withstood from 3000 to 10,000 psi. Thermoplastic material provides high dimensional stability, tensile strength and resilience under severe conditions. Russell, Burdsall & Ward Bolt & Nut Co., 100 Midland Ave., Port Chester, N. Y. Write No. 34 on Place Mark Card-Page 32

Automatic System Welds 300 Components/Minute



A fully automatic welding system is designed to assemble and weld up to 300 sub-miniature electronic components per minute. The continuous dial feed welder includes load stations to feed microscopic parts to produce transistors, diodes, resistors and other components. Mounted on a heavyduty frame with the stations is a continuous dial feed table, welding head, and transformer. Component parts are fed and positioned automatically from a vibratory hopper onto the lower electrodes. Controls are furnished for either push-button control or continuous feed cycle. Safety interlocks with signal lights protect the equipment and operator. The welder operates on 115 or 120 volts and measures 48" by 36" by 48", plus the power supply console. Commercial Apparatus & Systems Division, Raytheon Company, 1415 Providence Turnpike, Norwood, Mass.

Write No. 35 on Place Mark Card-Page 32

Authorized Distributors

for Crossett Leatherneck Wrapping Paper

ABILENE, TEX. ALEXANDRIA, LA. Bancroft Paper Co. APPLETON WISC. APPLETON WISC. Louisiana Paper Co. Dillard Paper Co. Dillard Paper Co. Dillard Paper Co. BATTANTA, GA. Dillard Paper Co. BATTIMORE, MD. BATON ROUGE, LA. BATON ROUGE, LA. BIRMINGHAM, ALA. DIllard Paper Co. BUFFALO, N. Y. CHICAGO, ILL. BOSTON, MASS. BERMINGHAM, ALA Berkshire Papers, IRC. Berkshire Paper Co. Bircher-Mamilton Co. Chatfield Paper Co. Diem & Wine Paper Co.
APPLETON, WISC. Louisiana Paper Co. Universal Paper Co.
ATLANTA, GA. Dillard Paper Co. AUGUSTA, ME. Carter-Rice-Storrs & Bement, Inc.
BALTIMORE, MD. Hubbs & Corning Co. RATON POLICE LA Rancroft Paner Co.
BIRMINGHAM ALA. Dillard Paper Co.
E. F. Osment Paper Co. BOSTON, MASS Carter-Rice-Storrs & Bement, Inc.
BUFFALO, N. Y. Hubbs & Howe Co. CHICAGO, ILL. Abana Products, Inc.
Berningham & Proser Co. Chicago Paper Co.
Inlander-Steindler Paper Co. Kraft Paper Sales Co.
Montrose Paper Mills Pilcher-Hamilton Co.
Chatfield Paper Co.
Merchants Paper Co.
CLEVELAND, OHIO
CLEVELAND, OHIO Seinsheimer Paper Corp. Alling & Cryr Ca. Gascon Paper Co. The Union Paper & Twine Co. COLUMBUS, OHIO Central Ohio Paper Co. Cinti, Cordage & Paper Co. Dien & Wing Paper Co.
COLUMBUS, OHIO. Central Ohio Paper Ca. Cinti, Cordage & Paper Ca. Diem & Wing Paper Ca. Standard Paper Co.
CORPUS CHRISTI, TEXCorpus Christi Paper Co.
DALLAS, TEX
DAVENPORT, IOWA Peterson Paper Co. DAYTON, OHIO F. W. Lotz Paper Co.
DETROIT, MICH Beecher Peck & Lewis Butter Paper Co.
EAST HARTFORD, CONN Carter-Rice-Storrs & Bennet, Inc.
CORPUS CHRISTI, TEX. Corpus Christi Paper Co. BALLAS, TEX. Megnolis Paper Co. DALLAS, TEX. Megnolis Paper Co. DAVENPORT 10WA. Peterson Paper Co. DAYTON, OHIO. F. W. Lotz Paper Co. DETROIT, MICH. Bescher Peck & Lewis Union Paper & Twite Co. EAST MARTFORD, CONN. Carter-Rice-Store & Bement, Inc. EVANSVILLE, IND. Korte Paper Co. FT. WAYNE, IND. Korte Paper Co. FT. WORTH, TEX. Western Paper Co. Lind Paper Co. Lind Paper Co.
GRAND RAPIDS, MICH Grand Rapids Paper Co.
HIGH POINT, N.C
INDIANAPOLIS, IND. Magnolia Paper Co. Capital Paper Co.
JACKSON, MISS
KALAMAZOO, MICH. Bermingham & Prosser Co. KANSAS CITY, MO. Bermingham & Prosser Co.
FT. WORTH, TEX. Western Paper Co. GRAND RAPIDS, MICH. Grand Rapids Paper Co. HAMMOND, IND. Inlander-Steindler Paper Co. HAMMOND, IND. Inlander-Steindler Paper Co. HGH POINT, N.C. General Paper Co. Magnolia Paper Co. INDIANAPOLIS, IND. Capital Paper Co. JACKSON, MISS. Townsend Paper Co. KALAMAZOO, MICH. Bermingham & Prosser Co. KALAMAZOO, MICH. Bermingham & Prosser Co. KANSING, MICH. LUISTER COCK, ARK. Arkansas Paper Co. LANSING, MICH. LUITLE ROCK, ARK. Arkansas Paper Co. LOUISVILLE, KY. Louisville Paper Mig. Co. LOUISVILLE, KY. Louisville Paper Mig. Co.
LOUISVILLE, KY. Louisville Paper Co. LOUISVILLE, KY. Louisville Paper & Mfg. Co. Southeastern Paper Co. Mayer Myers Paper Co. Wurzburg Brothers, Inc.
MILWAUKEE, WISC
MINNEAPOLIS, MINN. John Leslie Paper Co. MONROE, LA. Bancroft Paper Co.
MUNCIE, IND
NASHVILLE, TENN. Clements Paper Co. NATCHEZ MISS. Bancroft Paper Co.
NEENAH, WISC. Sawyer Paper Co. NEW HAVEN, CONN. Carter-Rice-Storrs & Bement, Inc.
OMAHA, NEB. Nogg Bros. Paper Co.
PHILADELPHIA, PA
MEMPHIS, TENN. Mayer Myers Paper Co. MILWAUKEE, WISC. Wisconsin Paper & Products Co. MINNEAPOLIS, MINN. John Lessie Paper Co. MORROE, LA. Bancroff Paper Co. MORROE, LA. Bancroff Paper Co. MUNCE, IND. Schwartz Paper Co. MUSKEGON, MICH. Schwartz Paper Co. MUSKEGON, MICH. Schwartz Paper Co. ANASHVILLE, TENN. Clements Paper Co. NASHVILLE, TENN. Clements Paper Co. NASHVILLE, TENN. Clements Paper Co. NASHVILLE, TENN. Clements Paper Co. NEW MAYEN, MISC. Schwartz Paper Co. NEW MAYEN, CONN. Carter-Rice-Storrs & Bement, Inc. OKLAHOMA CITY, OKLA. Oklahoma Paper Co. OMAHA, NE. B. Carter-Rice-Storrs & Bement, Inc. PHILADELPHIA, PA. W. B. Kilhour & Sons, Inc. PITTSBURGH, PA. B. Carter-Rice-Storrs & Bement, Inc. Chatfield & Woods Co. of Penns. Interstate Cordage & Paper Co. Chatfield & Woods Co. of Penns.
RACINE, WISC. Interstate Cordage & Paper Co. SAGINAW, MICH. Dudley Paper Co. SHREVEPORT, LA. Bancroft Paper Co. Louisians Paper Co.
SHREVEPORT, LA
SPRINGFIELD, ILL. Capital City Paper Ca. SPRINGFIELD, MO. Springfield Paper Ca. ST. JOSEPH, MO. Sheridan-Claylon Paper Ca. ST. LOUIS, MO. American Commission Co. Rosenthal Paper Ca. Rosenthal Paper Ca.
ST. LOUIS, MO
Royal Papers, Inc. Shaughnessy-Kniep-Hawe Paper Co.
TOLEDO, OHIO Central Ohio Paper Co. TULSA, OKLAHOMA Tulsa Paper Co.
TYLER, TEX. Etex Paper Co. WACO, TEX. Lind Paper Co.
Rosenthal Paper Co. Royal Papers, Inc. TEXARKANA, TEX. TOLEDO, OHIO TULSA, OKLAHOMA TYLER, TEX. WACO, TEX. WACO, TEX. WALTHAM, MASS. Waltham Bag & Paper Co. WALTHAM, MASS. Waltham Bag & Paper Co. WICHTA, KANSAS WORCESTER, MASS Carter-Rice-Storrs & Bement, Int.
WORCESTER, MASS Carter-Rice-Storrs & Bement, Int

For More Information about ad on facing page Write No. 226 on Place Mark Card—pg. 32→ PURCHASING



New Slant on Purchasing Paper



Crossett Machine Time Plan lets each customer get his paper precisely as and when ordered, at a fair price, whatever the state of the paper market.

Each of Crossett's regular customers reserves specific amounts of *machine time* for definite periods each month. In effect, each customer "owns the mill" for the time required to produce his specific requirements.

Crossett Leatherneck Wrapping Paper. Consistent quality in all weights, fully weight-controlled for customer savings.

Crossett Leatherneck Converting Kraft. Custom-produced to the exact weight and quality needed. Basis weight control assures predictable yardage per ton. Crossett Technical Service available to customers.

Crossett Food Board. Cylinder machine production places long and short fibers precisely where needed for every packaging and printing requirement. Crossett Technical Service helps with customer problems.

Crossett PAPER MILLS

A Division of The Crossett Company, Crossett, Arkansas, makers of paper, lumber, charcoal and chemicals. All from managed forests





HUBBELL FASTENERS PASS INSPECTION

AT 7 QUALITY CONTROL STATIONS

When a shipment of Hubbell fasteners leaves our Hubbell plant, everything humanly possible has been done to make those fasteners perfect in every respect. Here are the seven quality control stations that make every Hubbell fastener a finished precision product.

- Raw materials inspected, dimensions checked, alloys tested.
- Cold heading of blanks tested for material, quality and size accuracy.
 Blanks are tumbled to remove burns and chemically cleaned.
- After slotting, blanks are inspected for quality of cut and depth and width of slot; also for dimensional accuracy. Fasteners are again tumbled to remove slotting burs and chemically cleaned.
- Thread rolling operation precision checked for accuracy and fasteners chemically cleaned.
- Secondary operations checked for dimensional accuracy and workmanship. Again chemically cleaned.
- Plating operations checked to insure compliance with required specifications.
- Orders inspected for quality and cleanliness prior to shipment to be sure no foreign matter is included that might jam automatic feeds. Sturdy, weatherproof containers sealed for shipment.

This quality can be your greatest production economy. For standards or specials, call Bridgeport, EDison 3-1181.



Quality ...

FASTENERS

HARVEY HUBBELL, INCORPORATED

Machine Screw Department, Bridgeport 2, Connecticut

See the Hubbell Fastaner Catalog in Sweet's Product Design File 7/Hu.

For More Information Write No. 227 on Place Mark Card-Page 32

Products

Heavy-Duty Coolant Lengthens Tool Life

A cutting fluid and coolant is especially intended for the severest machining and grinding heavy duty operations. It eliminates many difficulties peculiar to heavy broaching, reaming, threading and tapping. In some cases tap life can be increased from two to four times. Jobs run cleaner and cooler and do not have to be degreased. Material is a white jell which is diluted with water. It can be used on alloys, stainless and cast iron, yet does not stain brass or aluminum. There is no odor, rancidity, gumming or skin irritation and face of the work is clearly visible through the translucent fluid. Master Chemical Corp., Huron & Washington Sts., Toledo 1. Ohio.

Write No. 36 on Place Mark Card—Page 32

Collapsible Container Can Be Reused



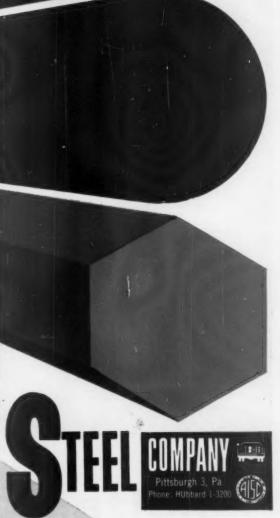
A plastic container for shipping dry and liquid bulk commodities collapses like an accordion into 12 in. high self-storing unit. Unique feature is use of thin, disposable plastic inner liner which eliminates cleaning and makes same container usable for different products without contamination. Three standard sizes are 35 cu ft (250 gal), 70 cu ft (500 gal), and 105 cu ft (800 gal). All sizes have 47 in. diameter, collapse to 12 in. Highway Trailer Industries, Inc., 250 Park Ave., New York 17, N. Y.

Write No. 37 on Place Mark Card-Page 32

Dealers in American made steel for over half a century

WHEN YOU NEED STEEL CUT TO SIZE OR FULLY FABRICATED YOU CAN DEPEND ON LEVINSON. THOUSANDS OF COMPANIES HAVE LEARNED TO RELY ON LEVINSON FOR 58 YEARS WITH FULL ASSURANCE THAT THEIR STEEL WILL BE DELIVERED AS SPECIFIED AND ON TIME.

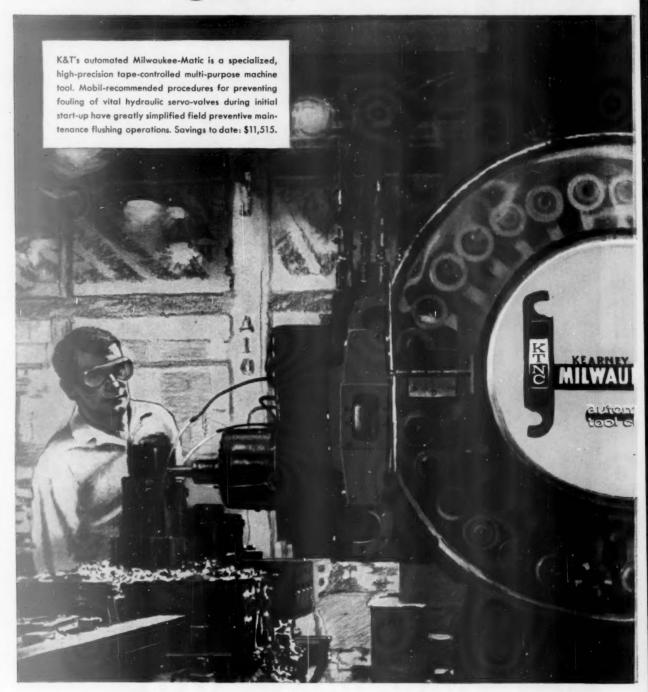
EVINSON



For More Information Write No. 228 on Place Mark Card-Page 32

the

Mobil Program produces \$20,099





savings for Kearney & Trecker

anger

Reduces oil costs . . . promotes effective PM procedures . . . produces production economies in building of K&T special tape-controlled machinery

Kearney & Trecker is a major producer of numerically controlled precision machines, including skin mills, profilers—and the exciting new Milwaukee-Matic, a tape-controlled machine tool which can automatically perform a wide variety of complex machining operations on a given workpiece with a single setup.

Long a subscriber to the Mobil approach to Correct Lubrication, K&T has relied on a Mobil Program through the 7 years of operation of its Special Machinery Division plant. Close cooperation and liaison between Mobil and K&T personnel have resulted in a minimum of downtime, rock-bottom lubrication costs, and improved maintenance, manufacturing and production efficiencies. Dollar savings at K&T to date total \$20,099... just one indication of the success of the Mobil Program.

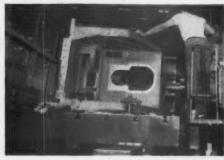
For information on how a Mobil Program might benefit you, call your Mobil Representative or write: Mobil Oil Company, 150 East 42nd Street, New York 17, New York.



To assure clean hydraulic systems and correct operation of servo-valves, K&T uses large quantities of hydraulic oil to test-operate its special machinery prior to shipment. Previous practice had been to discard all oils after a single use. At Mobil's recommendation, these oils are now filtered and re-used for preliminary flushing operations. Savings to K&T: \$4,631 in 1959.



In manufacturing Profilers, K&T planned to remove loose mill scale from hydraulic piping by dismantling parts and pickling them. At Mobil's recommendation, piping was left intact, and each unit was flushed with a specially formulated hydraulic oil. This dissolved binder material permitting effective removal of dirt and scale—with resultant savings of \$3,953.



A Mobil-recommended preventive maintenance procedure for correct lubrication on this \$300,000 horizontal boring mill prevented a recurrence of a \$2,550 repair bill previously caused by lack of lubrication.



When the mist lubricating unit in K&T's Milwaukee-Matic produced a dense migrating oil fog, Mobil was asked for a solution. Next morning K&T had it. A special Mobil oil in the micro-fog unit eliminated objectionable fog.

Correct Lubrication

Products

Fractional HP Drives Have Wide Speed Range



A fractional hp variable speed drive called industry's lightest and most compact is up to 15% lighter than competitive units and has shortest over-all dimension. Speed ranges from 4660 rpm to 1.2 rpm with up to 10 to 1 variation are offered in ¼, ½ and ¾ hp ratings. Retention of important NEMA standard dimensions for shaft height and diameter permits substitution with standard motors. Available in single phase and

three phase units and in dripproof, totally enclosed and explosion-proof enclosures. Unit may be foot mounted in any position or furnished with face mounting bracket. Sterling Electric Motors, 5401 Telegraph Rd., Los Angeles 22, Calif.

Write No. 38 on Place Mark Card-Page 32

Flux-Coated Silver Alloy Cuts Brazing Time



A flux-coated silver-brazingtype alloy eliminates need for separate flux and cuts brazing time two-thirds. Alloy comes in rods of 1/16 and 3/32 in. diameter. It is suitable for ferrous and non-ferrous metals and for all types of joints including tee, butt, fillet, and lap or sleeve. Low application temperature and high fluidity, strength and electrical conductivity are advantages. Deposits are cadmium free and product may be used safely on food vessels and processing equipment. Eutectic Welding Alloys Corp., 40-40 172nd St., Flushing 58, N. Y. Write No. 39 on Place Mark Card—Page 32

All-Purpose Coating Protects from Rust

An all-purpose black coating protects metal against rust and other exposure. Paint produces attractive, bright ebony black finish, impervious to water and resistant to chemical attack by gas fumes and smoke. It can be used after minimum surface preparation and is anti-corrosive above or below grade. Coating remains elastic and expands and contracts with metal during extreme temperature changes, making it ideal for tanks, metal roofs, cables, steel window frames, machinery, etc. Dries quickly and is adaptable to either brush or spray application. Maintenance, Inc., Wooster, Ohio.

Write No. 40 on Place Mark Card-Page 32

TOM BIGBEE SAYS:

"maintenance costs affect everybody in the company!"



Excessive maintenance costs cut into profits and that concerns everybody. But something can be done about it. Towels that absorb better cut down the number needed each time. Correct size and fold for your requirements, with efficient dispensers, save money. Properly designed twin-roll tissue dispensers cut maintenance time. A choice of single- or two-ply rolls provides the complete answer to all needs. Call your Marathon paper merchant. He'll be glad to tell you the story on economical washroom maintenance.

marathon (**)

A Division of American Can Company MENASHA, WISCONSIN

Single-, multi- or C-fold towels, bleached or unbleached. Service Roll or Dorsette Facial Grade Tissue. Dispensers.

For More Information Write No. 230 on Place Mark Card-Page 32

Don't miss the

"PRODUCT GUIDE for OFFICE BUYERS"

in the

OCTOBER 24th

issue of

Purchasing Magazine



better way to stack up profits

Fertilizer and chemicals go from maker to user more safely and at *less cost* when packed in Wonderwall bags, West Virginia's new, sturdier multiwalls.

Wonderwall bags are made with Clupak* extensible paper—pioneered by West Virginia. It stretches and absorbs far more impact than regular kraft. Because of this toughness, breakage is reduced, fewer or lighter plies are needed, and costs are lowered.

This is an example of how West Virginia serves its customers. Through research expenditures of over \$3,000,000 annually, West Virginia produces outstanding quality with unusual efficiency.

Get the facts on Wonderwall, the new, tougher bag. Write Multiwall Bag Division, West Virginia Pulp and Paper Company, 230 Park Avenue, New York 17, New York.

*Clupak, Inc.'s trademark for extensible paper, manufactured under its authority and satisfying its specifications.



For More Information Write No. 231 on Place Mark Card-Page 32



KIRBY THORNTON'S \$1,489,486,655 WORKSHOP

Aluminum - want to make something of it? See Kirby Thornton. For you, he'll fashion the world's biggest forging on a 50,000-ton press that uses dies as long and as wide as a house trailer. Or he'll punch out extrusions a foot in diameter and five feet long with one costcutting stroke of an impact press . . . cast you an impeller whose gull-wing blades taper to a precise featheredge roll you a sheet eight feet wide and a highway long.

But perhaps you'd like to roll your own. Kirby'll send you the finest aluminum ingots and plates to press, rods and bars to whittle, powders and pastes to mix-in any size, weight, strength or

quantity you need.

Who is Kirby Thornton? He's chairman of the three-man committee that coordinates the world's largest lightmetals workshop: Alcoa. If you've an idea, and it requires multiple facilities, Kirby knows where to go among Alcoa's 9 mines, 3 ore refining locations, 8 smelters, 6 research labs and 23 fabricating plants for the brains and tools to work it out and bring it in.

Because he knows his men and machines, because he knows more than one way and one place to do a job efficiently and economically, Kirby Thornton is an extra value you get with every pound of Alcoa® Aluminum you buy. AluminumCompany of America, 2017-K Alcoa Building, Pittsburgh 19, Pa.





Alcoa has hundreds of Kirby Thorntons to help you design it, make it, sell it

All of Alcoa's skills are mobilized to a single purpose: To put more than just 16 ounces of metal in every pound of Alcoa Aluminum you buy. Here are 12 of the dozens of ways to do it:

- 1. Research Leadership, bringing you the very latest in aluminum alloys and applications.
- 2. Product Development by specialists in your industry and your markets.
- 3. Process Development Labs for aid in finishing, joining, fabricating and packaging.
- 4. Service Inspectors to help solve production problems at your plant.
- Quality Control to meet top standards or match your special needs.
- 6. Complete Line including all commercial forms, alloys, gages, tempers.
- 7. Availability via the nation's best stocked aluminum distributors.
- 8. Foremost Library of films and books to help you do more with aluminum.
- 9. Trained Salesmen with a wealth of on-the-spot information.
- 10. Sales Administrators constantly on call to service your orders.
- 11. Year-Round Promotions expanding your old markets, building new ones.
- 12. The Alcoa Label, leading symbol of quality aluminum, to mark your goods.

Added Values With Alcoa Aluminum



. . . is a case book of Alcoa special services and a guide to their availability in design, manufacture and sales. Your copy, with some of the most rewarding information you may ever read, is waiting and it's FREE. Write: AluminumCompanyofAmerica, 2017-K Alcoa Building, Pittsburgh 19, Pa.

For More Information about ad on facing page -Write No. 232 on Place Mark Card—pg. 32 OCTOBER 10, 1960

Products

Strapping Calculator Figures Size and Price



A strapping calculator solves seven types of problems: computes the pounds of strapping needed for a given package size; figures the total strapping necessary for a given production run; calculates the strapping cost per unit for any package; establishes the total strapping cost per unit for any package; computes the cost-per-foot for each strapping variety; shows number of feet per pound and tensile strength for each stock size; and indicates the quantities at which favorable price breaks are available. Calculators are available free to users of steel strapping. Signode Steel Strapping Company, 2600 North Western Ave., Chicago 47, Ill.

Write No. 41 on Place Mark Card—Page 32

Indirect-Fired Furnace on Wheels



An oil furnace on wheels blows air around the outside of completely enclosed combustion cham-

ber, producing heated fresh air instantly and in large volume. Any fumes can be vented out the top to meet safety specification. Ducts can be provided to pipe heat to specific areas for spot heating. Heaters are ideal for areas without central heating such as warehouses or loading docks. One model produces 200,000 btu of heat at rate of 1600 cu. ft. of warm air per minute. Second produces 420,000 btu at rate of 4500 cu ft per minute, and has built-in room thermostat. Both models have completely automatic ignition and safety controls. No attendant is required. Stow Mfg. Co., 109 Shear St., Binghamton, N. Y.

Write No. 42 on Place Mark Card-Page 32

Portable Hardness Testers Stress Accuracy



Hardness testers which combine accuracy and portability provide Rockwell hardness readings for all standard and special scales and use loading and penetrators in accordance with ASME and ASTM specifications. One model weighs only 23 lbs. It attaches electromagnetically to the material to be tested and is particularly useful in testing large pieces because it eliminates necessity of moving material. The other model weighs 21 lbs and is the first horizontal unit to be offered to industry. It is non-magnetic, uses no weights, levers and pullies, requires no leveling and can be moved from place to place without special installation. Advance Industries, Inc., 640 Memorial Dr., Cambridge, Mass.

Write No. 43 on Place Mark Card-Page 32

ELIMINATE UNNECESSARY ASSEMBLY COSTS



CF (Cam Follower) SERIES

The original and still unsurpassed anti-friction roller bearing cam-follower bearing that adds efficiency at less cost to cam actuated, track and support roller applications. Built with full roller complement and integral stud, the CF series design provides high radial capacity and shock load protection in a compact roller with its own shaft. Easily applied and available in roller diameters of ½" to 4".

SCF SERIES.

Sealed to keep contamination out and lubricant in. It is dimensionally interchangeable with the CF bearings. A turned groove in the center of the outer raceway bore provides a permanent lubricant reservoir to approach life-time lubrication requirements. Can be easily re-lubricated.

CYR (Cam Yoke Roller) SERIES

The CYR series increases the adaptability of the CF bearing to all types of automatic machinery involving cam action or controlled-motion machine parts that require guide or support rollers. An inner ring replaces the stud for cam yoke roller mountings.

SCYR SERIES

This series provides a fully sealed Cam Yoke Roller type bearing. It is dimensionally interchangeable with the CYR bearings.

McGILL MANUFACTURING CO., INC., Bearing Division
550 N. Lafayette Street, Valparaiso, Indiana
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for the ultimate in:

- . RADIAL CAPACITY
- . SHOCK RESISTANCE
- SPACE ECONOMY



SCYR SERIES (sealed)

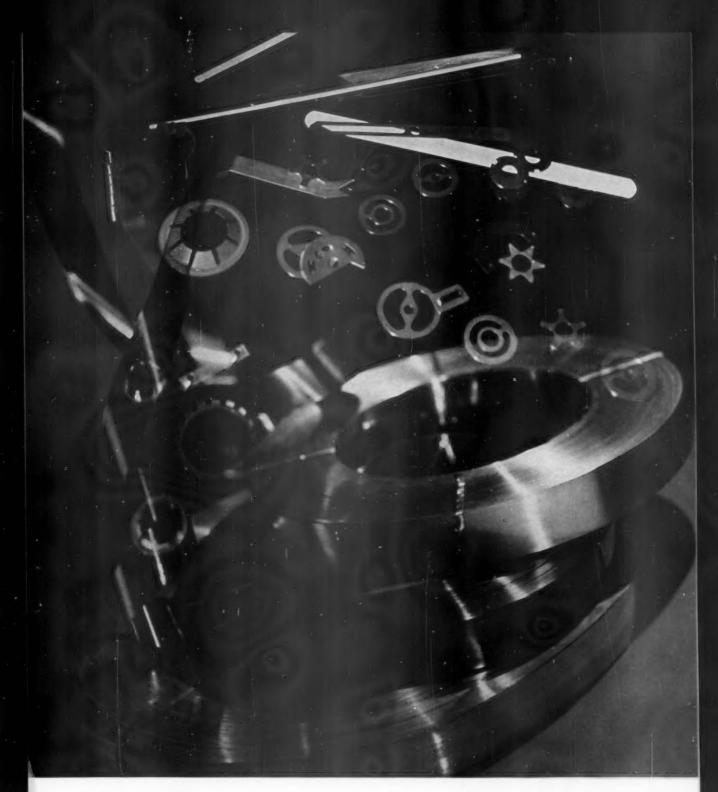
Write for Catalog No. 52-A for full information on McGill's needle roller bearings, and cam followers. Ask about recommendations for high precision special ball and roller bearings.



engineered electrical products



For More Information about ad on facing page Write No. 234 on Place Mark Card—32→ Purchasing



Quality in Ascendancy

The superiority of the vast number of products that are — and can be made from Roebling Cold Rolled Flat Spring Steel is a fact known throughout all industry.

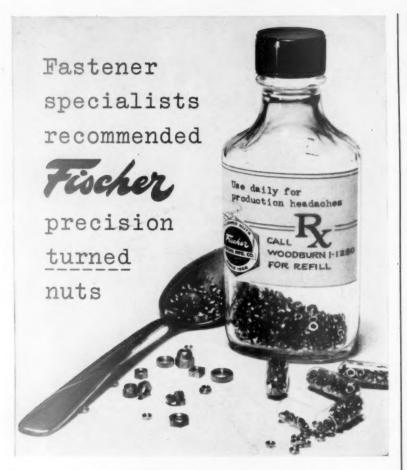
You pay for mechanical and dimensional uniformity when you buy flat spring steel...you get it when you buy Roebling.

For information on how our products can help yours, write Roebling's, Wire and Cold Rolled Steel Products Division, Trenton 2, New Jersey.

ROEBLING [

Branch Offices in Principal Cities John A. Roebling's Sons Division The Colorado Fuel and Iron Corporation

Roebling ... Your Product is Better for it



to cure fastening and assembly headaches in miniaturized equipment!

Assembly operations for conventional size electrical and electronic equipment frequently are difficult, painstaking, time-consuming. But when miniature components are involved, fastening problems can become extremely critical. That is why maximum accuracy and uniformity are absolutely necessary in fasteners used in miniature assemblies.

Fischer . . . the leading producer of precision turned nuts . . . has paced miniaturization trends by establishing a high-production capability for miniature brass nuts. Ranging in size from 1/8" x 3/64", with standard or special threads from No. "0", these tiny nuts are solving fastening problems in all types of precision instruments and equipment.

If you require extreme accuracy . . . and want onschedule deliveries at competitive prices . . . let Fischer quote your next miniature nut order.



there's no premium for precision at

WRITE FOR

BULLETIN M-600

FOR DETAILS.

FISCHER SPECIAL MFG. CO.
471 Morgan St. • Cincinnati 6, Ohio

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Products

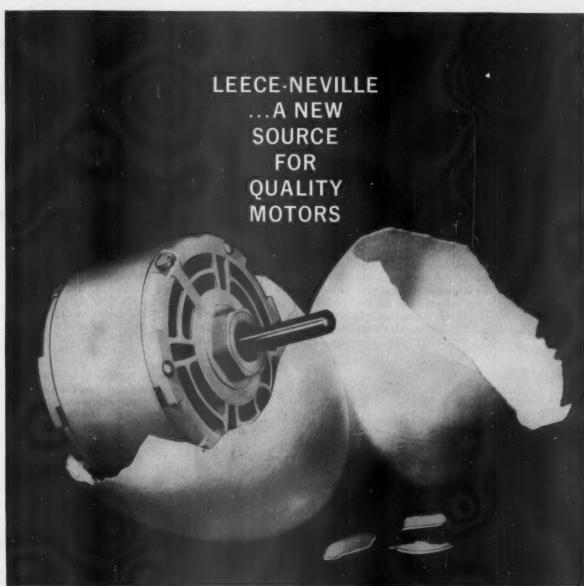
Safety Can Helps Drain Inflammable Liquids



A drain can for draining flammable liquids from industrial drums, automotive crankcases, and other containers has a large funnel with a wide opening and perforated metal fire baffle to guard against flame or spark igniting the contents. The top is easily removed for emptying or cleaning. Can has a seamless body drawn from 24-guage terne coated steel with parts electrically welded. Can is designed for rough handling, has a heavy wire handle for easy carrying, and is approved by Associated Factory Mutual Fire Insurance Companies. Capacity is 3 gallons. Eagle Manufacturing Co., 1068 Charles St., Wellsburg, W. Va. Write No. 44 on Place Mark Card-Page 32



"Thanks for the sample. Now get on over to the purchasing department and don't try any more back door selling."



Announcing a new line of shaded pole and permanent split capacitor motors

Leece-Neville, world's largest independent supplier of fractional hp DC motors for automotive use, announces a complete new line of fractional hp shaded pole and permanent split capacitor motors for use in air conditioning and other blower-type equipment. Basic shaded pole motors range from $\frac{1}{150}$ to $\frac{1}{4}$ hp... permanent split capacitor motors from $\frac{1}{15}$ to $\frac{1}{2}$ hp. Our fully staffed engineering department can help you adapt a basic unit or design a special motor.



We invite you to compare Leece-Neville quality, ability to deliver, and prices with these of your present suppliers. For details, mail coupon.

MUELLER BRASS CO. PRODUCES SPECIFICATIONS . . . REGARDLESS OF

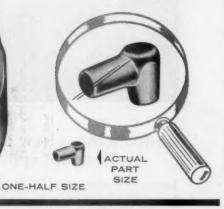
To obtain the desired physical and design requirements in a part at the lowest cost, there is usually one specific process by which that part can be most successfully and economically manufactured. Because the Mueller Brass Co. offers a variety of production methods, you get sound engineering, accurate production method analysis, our assurance of getting the best product at the lowest cost . . . regardless of metal specified or the size of your particular part.

BRASS, BRONZE, ALUMINUM FORGINGS

The two parts shown here dramatically illustrate the ability of the Mueller Brass Co. to produce precision forgings regardless of size or configuration. Both the tiny dental drill nozzle and the big heat exchanger shell hub, which is the largest of its kind ever produced, were forged to exacting specifications. The weight of the nozzle is only a few ounces while the shell hub weighs 40 lbs., and has a forged pocket 71%" in diameter and 4\%" deep. By way of size comparison, the pocket is big enough to hold over 14,000 of these tiny drill nozzles. By forging the pocket, considerable machining time and money was saved. The sound, dense structure of the

shell hub makes it ideal for the high pressure application for which it was designed. The forging not only does the job better, but was produced for 25% less than the casting it replaced. Experience makes it possible for the Mueller Brass Co. to produce high quality precision forgings regardless of specifications . . . why not put this experience to work for you?





Write today for Engineering Bulletins on any of these Products.



SCREW MACHINE PRODUCTS



POWDERED METAL PARTS



MUELLER BRASS CO.

PARTS ECONOMICALLY...TO EXACT

METAL, METHOD OR SIZE...

When you are designing, specifying or purchasing fabricated parts, call in the "Man From Mueller Brass Co." to help lower costs and improve your products. Sales and engineering service is available to you at Mueller Brass Co. offices throughout the United States. Make Mueller Brass Co. your one dependable source for all your part needs.

COLD PREST® IMPACT EXTRUSIONS

Today, because of vast experience in alloys, the Mueller Brass Co. has greatly expanded the possibilities of parts production by the impact extrusion method. Aluminum, of course, has been successfully used for a multitude of tubular shapes. But now it is also possible to impact parts of copper alloys incorporating such major advantages as: closer tolerances, better finish and appreciable metal savings. Because of dimensional accuracy possible with the impact extrusion, the necessity of secondary machining operations is often eliminated.

The parts shown here are representative of the group now being economically produced as impact extrusions by the Mueller Brass Co. who offer complete engineering and design service in the development of new parts from copper base alloys.



Oxygen Free High Conductivity Copper



Special Alloy 902



Tellurium Copper Alloy



90-10 Copper Nickel Alloy

Copper Alloy

SOURCE FOR ALL THESE OTHER PRODUCTS



FORMED COPPER TUBE

STANDARD and SPECIAL ALLOY ROD

PORT HURON 30, MICHIGAN



319

For More Information Write No. 237 on Place Mark Card-Page 32



'BUFFALO' HAS THE RIGHT ANSWER!

The boys in the back room aren't the only ones who create a ventilation problem! With many of today's processes in plants, ventilation is an absolute must. Heat, fumes, dust, smoke, gases must be removed.

The only question is "how best". Here's where 'Buffalo' know-how and 'Buffalo' Fans can help you.

For large-area exhaust, many plants enjoy the most economical service-possible with 'Buffalo' Roof Ventilators. These package units are economical to install. They exhaust from large areas without need for ducts. They perform at peak efficiency, with minimum power consumption and virtually no maintenance care.

And where an exhaust system in a plant calls for makeup air, 'Buffalo' Makeup Air Units re-supply all necessary heat and fresh air, filtered

Write us about your ventilation problem. We'll have your nearest 'Buffalo' Engineering Representative contact you with complete information and recommendations on the best and most economical answer.



'Buffalo' Roof Ventilators



if desired.

AIR HANDLING DIVISION

BUFFALO FORGE COMPANY

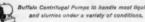
Buffalo, New York

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.



Buffalo air handling equipment to move, heat, cool, dehumidify and clean air and other gases

II, punch, shear, bend, sill, on or plant maintenance.





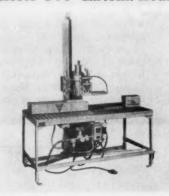
Squier machinery to process sugar cane, coffee and rice.

Special processing machinery for chemicals,

For More Information Write No. 238 on Place Mark Card-Page 32

Products

Stapling Machine Closes 500 Cartons/Hour



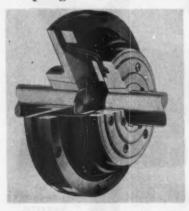
A fully automatic dual head industrial stapling machine for closing corrugated cartons can drive and clinch 5000 staples from each head before reloading. This is equivalent to closing 1250 cartons, using four staples each on top and bottom. Stapler closes top and bottom simultaneously and will handle up to 500 cartons per hour. It is adaptable to full range of carton sizes and shapes with minimum adjustments. Automated models feed cartons to machine from accumulator, close top flaps, drive and clinch staples, and move carton on to discharge conveyor system. International Staple and Machine Co., P. O. Box 270, Herrin, Ill. Write No. 45 on Place Mark Card-Page 32

Industrial Fence Will Not Corrode



A corrosion resistant, non-conductive, fire retardant fencing, is composed of continuous strands of glass rovings and polyester resins. The long-lasting fencing is rat-proof and has no moisture pick-up (maximum moisture absorption .05). It does not require paint and eliminates maintenance and replacement costs. Standard thickness is 3/8 inches on 1 inch center. Present standard size is 30"x80" but fence is also manufactured to specification. Weight is 1/3 pound per square foot; fibre glass tensile strength-125,000 P.S.I. Pigmented resins makes possible color variations to provide safety colors and color coding. Can be cut by tinsnips, hacksaw and hand-powered tools. Crompton and Knowles Corp., Midland Park, N. J. Write No. 46 on Place Mark Card-Page 32

High Speed Flexible Couplings Cushion Shock



Two cushion-type couplings for high speed or high torque applications feature a pan-shaped rubber flexing element of original design. Both couplings are recommended to accommodate, either singly or in any combination, angular and parallel shaft misalignment and end float, to absorb torsional vibration, and to cushion shock loads. High speed coupling may be used with electric motors or internal combustion machines to operate such equipment as hammer mills compressors, pumps, high speed fans, etc. Flywheel type bolts directly to flywheel of internal combustion machine. Couplings come in sizes to deliver up to 47 HP per 100 rpm. Dodge Mfg. Co., Mishawaka, Ind.

Write No. 47 on Place Mark Card-Page 32



FASTER MAINTENANCE REPAIRS?

The right 'Buffalo' Machine Tools can clean up a backlog of maintenance repair jobs in a hurry without putting on more help or enlarging plant space.

Take the 'Buffalo' Universal Iron Worker. It does the work of SIX metal-working machines — cuts, punches, shears, slits, copes and notches — handles angles, bars, tees, channels or flats — does two operations at once. Steps up your fabrication 600%, all in the space of one machine.

Take 'Buffalo' Drilling Machines. Complete selection — 1 to six spindles — micro-size to 2" drilling in steel — sensitive or power feed — bench or pedestal models — hand or foot feed — any type of arrangement for convenience, accuracy and rapid drilling, tapping and reaming.

Whatever your metalworking problem — maintenance or straight production — call in your nearby 'Buffalo' Machine Tool Representative. He'll have suggestions that will get your work done at the lowest possible cost, in the shortest possible time!





MACHINE TOOL DIVISION

BUFFALO FORGE COMPANY

Buffalo, New York

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.



Buffalo air handling equipment to move, heat, cool, dehumidify and closn air and other gase

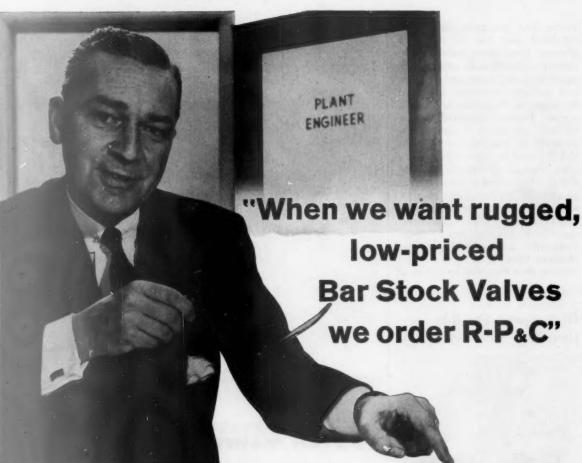


Suffate Contribugal Pumpe to handle most liquide and slucrice under a variety of conditions.



Squier machinery to process sugar cane, coffee and rice. Special processing machinery for chemicals.

For More Information Write No. 239 on Place Mark Card-Page 32



"For a really versatile, all-purpose valve, we've found there's none better than R-P&C bar stock valves. Designed and built for close control service, the construction of these valves makes them well suited to many general purpose applications as well. For example, the compactness of R-P&C bar stock valves is particularly advantageous for close-coupled installations in instrument lines or on panel boards and for pressures up to 10,000 lbs. in steel."

These valves are available in a wide variety of materials to withstand extremely high temperatures and pressures. But best of all, R-P&C bar stock valves are economically priced. This is made possible through special techniques developed by R-P&C.

We highly recommend R-P&C bar stock valves for meter, gauge, sampling, or test valves on equipment requiring a reliable compact valve that can withstand high pressure service.

Contact your R-P&C distributor for full details about bar stock valves in bronze, carbon and stainless steels plus the complete line of R-P&C gate, globe and angle valves in all standard materials.

R-P&C VALVES

R-PaC Valve Division, American Chain & Cable Company, Inc.

Reading, Pa., Atlanta, Boston, Chicago, Denver, Detroit, Houston, New York,
Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.







Idling at 70° below zero—or pushing at 127°

one TATIONAL brush fits both jobs!



H. H. FRASCH

PROBLEM: This earth-moving equipment operated in rugged terrain where temperatures might vary 200 degrees.

RECOMMENDATION: Henry Frasch and the manufacturer agreed on "National" Brush Grade SA-45.

RESULTS: Excellent cold weather and tropical performance even where commutator speeds reach 5,000 RPM.



Contact your "National" Brush Man

"National", "N" and Shield Device, and "Union Carbide" are registered trade-marks for products of

NATIONAL CARBON COMPANY

Division of Union Carbide Corporation • 270 Park Avenue, New York 17, New York IN CANADA: Union Carbide Canada Limited, Toronto

UNION CARBIDE

SAFER! More Practical around electricity and chemicals



Meet ASA Code A 14.2 for portable metal ladders

Heavy duty fiberglass siderails, high tensile strength aluminum steps and rungs.

NON-CONDUCTING!

NON-ABSORBENT! Exclusive

Alco-Lite construction adds strength and safety. Light and strong as an all-aluminum ladder. Safe around high voltages, more practical around chemicals, acids, fumes, gases. Send for ILLUSTRATED CATALOG.

Aluminum Ladder Co.

West Darlington Street Ext.
FLORENCE 9 S. CAROLINA

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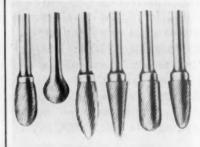
Products

One-Man Car Speeds In-Plant Transportation



A one-battery electric car that seats one man and his equipment weighs only 181 pounds, has a low center of gravity and a safe speed limit of 41/2 miles per hour. It operates with accelerator and foot brake. It is just 35" wide, narrow enough to get through the tightest aisle. A heavy-duty battery powers the car for 10 miles. Each car contains its own charger and can be recharged overnight by plugging in any outlet. The car is driven by a single rear wheel. eliminating heavy transmissions and differentials, and has a direct belt and chain drive for complete control. Birdie Co., Inc., 393 Springfield Avenue, Summit, N. J. Write No. 48 on Place Mark Card-Page 32

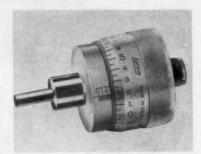
Rotary Files Eliminate Clogging, Dead Area



An innovation in the design of tungsten carbide rotary files combines the best advantages of both sectional and center fluting. Chatter and chip-clogging at the nose of the file is done away with, and the dead area at the index is eliminated. Beveling pattern provides a high rate of metal removal over file's entire surface with consistently good finish. Files operate best at high or ultra-high speeds but can also be used with slower power sources. Grobet File Co. of America, Ltd., Carlstadt, N. J.

Write No. 49 on Place Mark Card-Page 32

Large-Diameter Micrometer Head



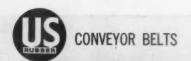
A large-diameter, chrome-clad micrometer head is designed for applications requiring extra-fine adjustment. It is also useful on special gages and tools, fixtures, etc. Reads from left to right, with the spindle receding into the head as the reading increases. Measures by 10,000ths in.; range is 0 to 1 in.; spindle length at 0 in. is 1½ in.; spindle diameter is .270 in.; clamping surface length is ¾ in.; diameter is .7505 in. Lufkir Rule Co., Saginaw, Mich.

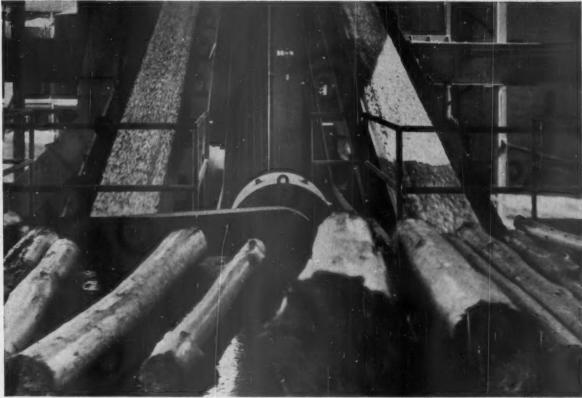
Write No. 50 on Place Mark Card—Page 32

Fluorescent Lamp Gives Maximum Output

A fluorescent lamp which utilizes a new phosphor combination provides 15% more light than standard 40 watt cool white bulbs and 36% more than daylight type lamps. Main objective is maximum output of light at lower cost. Lamp is expected to be widely used in applications where high light output is more important than critical color rendition, such as factories, warehouses, foundries, machine shops, etc. Lamp Division, Westinghouse Electric Corp., Bloomfield, N. J.

Write No. 51 on Place Mark Card-Page 32





Note the perfection of training and troughing shown in this photograph.

Marathon-Southern's new mill is 100% equipped with "U. S." Conveyor Belts

United States Rubber literally has the run of the mill in the Marathon-Southern Corp.* mammoth unit at Naheola, Alabama. "U.S." Conveyor Belts are used as follows:

*Two U.S. Matchless® Conveyor Belts for log sorting.

*Two U.S. Matchless Conveyor Belts for use as chipper feed log belts.

*Six U.S. Oil-resistant Conveyor Belts (two running from chip conveyors to screens, two running from chip conveyors to silos and two more running from silos to chip conveyors).

*One U.S. Oil-resistant Conveyor Belt used as a digester feed chip conveyor.

*One Oil-resistant belt used as screen rejects conveyor.

*One Oil-resistant belt used as purchased chip conveyor.

*U.S. Giant Conveyor Belt used as refuse conveyor to boiler.

*Special Tan Natural Rubber Covered Belt used as stock conveyor from washer.

*Special Tan Natural Rubber Covered Belt used as stock conveyor to MD storage.

*U.S. Giant Conveyor Belt carrying coal to crusher house.

*U.S. Giant Conveyor Coal Stacker Belt.

*U.S. Giant Conveyor Belt carrying coal from crusher house to boiler.

*U.S. Giant Conveyor Belt used on coal reclaim feeder.

Marathon-Southern's selection of "U.S." Belts exclusively is due to their long-established record of low-cost haulage, durability and freedom from maintenance. This is another mill in which "U.S." demonstrates the kind of performance that has made it the foremost authority in belting.

The most comprehensive belting engineering information is available through your "U. S." Distributor. It will pay you to check with him.



Mechanical Goods Division

United States Rubber

WORLD'S LARGEST MANUFACTURER OF INDUSTRIAL RUBBER PRODUCTS

Rockefeller Center, New York 20, N.Y.

In Canada: Dominion Rubber Company, Ltd.

For More Information Write No. 243 on Place Mark Card-Page 32



ALUMINUM . RPASS . COPPER . STAINLESS

One phone call to Chase



ROD users! Investigate Chase 3-Mark Free-Cutting Brass. It runs at higher speeds, avoids costly jam-ups and mis-feeding. Uniform lengths facilitate multiple-feed operations with minimum scrap. Check coupon for details.



STRIP users! Special processing of Chase S-19 Brass Strip at the mill gives this metal finer, close-grain surface. Expert handling from mill to you protects it. Check coupon for more information about Chase strip.



WIRE users! There's a special service for you ... the expert assistance of the Chase Wire Service Man. He'll tell you which of the many wire alloys we make is best for what YOU make. To see him, check the coupon.



ALUMINUM BRASS-COPPER STAINLESS

Chase Multi-Metals Service Centers:

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Tel. BAldwin 3-5800
PITTSBURGH 33, PA.
1001 Brighton Road
Tel. CEdar 1-7900
PROVIDENCE 1, R. I.
66 Branch Avenue
Tel. DExter 1-2300
ST. LOUIS 10, MO.
4641 McRee Ave.
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SO. SAN FRANCISCO, CALIF.
230 Shaw Road
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SEATTLE 4, WASM.
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Tel. Main 4-1862
WATERBURY 20, CONN.
40 East Farm St.
Tel. PLaza 6-9444, Ext. 209

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gets them all!

Stocks and skills in metals that are outstanding in our industry are at your service and at your elbow, too, simply by calling Chase. You can be sure of the metals you need in the forms you want...when you want them.

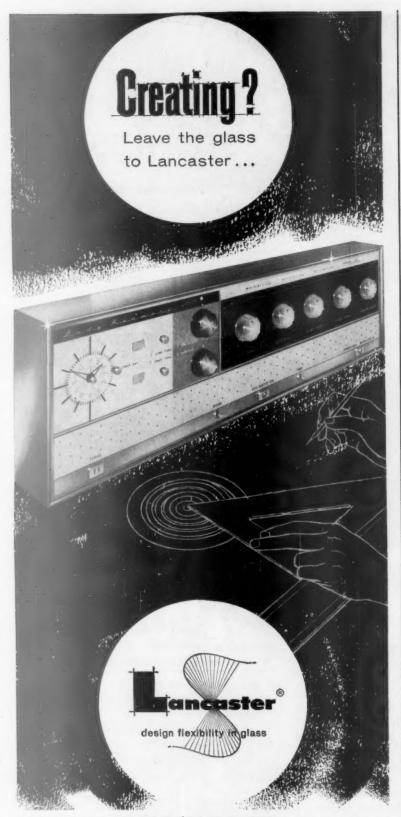
But that's only part of Chase service. The industry's most complete network of warehouses and sales offices ...metallurgical assistance from experts in their fields... painstaking care at the mill and in processing your order. You get all these—and more—when you rely on Chase.

Mail the coupon at right for up-to-the-minute stock lists. And phone your next order for aluminum, brass, copper and stainless to the Chase Multi-Metals Service Center near you—for service no other company can match.

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Subsidiary of Kennecott Copper Corporation

CHASE BRASS & COPPER CO. DEPT. P-10, WATERBURY 20, CONN.
Please send me the following literature:
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If your new design needs components of glass or plastic, you've come to the right place. Lancaster englineers work with you in the brainstorming phase, then go off by themselves and produce. A few days later, you get designs and details on parts, production and costs. Result: more effective planning, and a brighter future for your product, Write or phone Lancaster Glass Corporation, Lancaster 4, Ohio. OLive 3-0311.

For More Information Write No. 245 on Place Mark Card-Page 32

Products

Luminous Ceiling Panels Aid Light Diffusion



A vinyl luminous ceiling material combines exceptionally high light-transmission qualities with even diffusion. Panels are specially fabricated from Bakelite vinyl sheeting and provide a transmission efficiency of 68 % compared to 48% of standard vinyl diffusers. Material is made in varying translucencies, permitting increased brightness control. Panels do not support combustion and are furnished in standard 23¾ x 23¾ and 23¾ x 47¾ sizes. Cirvac Plastics, Erie. Pa.

Write No. 52 on Place Mark Card-Page 32

Fractional HP Motors Have Removable Brushes



Externally removable brushes are featured in a line of low-cost fractional HP electric motors. Brushes provide quick, easy replacement. Motors are ideal for special purpose applications where customers do simple maintenance, such as air conditioning, refrigerator compressors, hand driers and marine uses. Redmond Co., Inc., Owosso, Mich.

Write No. 53 on Place Mark Card—Page 32

Important Cost-Reducing News from 30 Years of Research and Production of High-Strength, Furnace-Treated Steels!*

NOW IN ALLOY AS WELL AS IN GARBON



Bliss & Laughlin again brings you another benefit of its long-range product development program—ALLOY Strain-Tempered bars to supplement an extensive line of CARBON Strain-Tempered bars. The cost-saving advantages are significant!

IF YOU USE HEAT-TREATED ALLOY BARS, you can save up to 30% in processing extras by switching to Bliss & Laughlin Strain-Tempered Alloy bars, Strength and hardness are equal. Machinability is comparable. Ductility is somewhat lower, but adequate for many applications. Size limitations depend on individual specifications. With Strain-Tempered Alloy bars, it is frequently possible to select a grade with a lower grade extra than is possible with heat-treated alloys, thus saving additional money.

IF YOU HEAT TREAT ALLOY STEEL PARTS, Strain-Tempered Alloy bars may meet your hardness specifications at lower cost. In addition, problems of distortion and finish associated with heat treatment are eliminated. Strain-Tempered Alloys can be tailored to hardness in the 30 Rockwell "C" range and up to 40 Rockwell "C" and higher in some combinations of size and alloy grade. Ductility and impact properties, while lower than in heat-treated alloys, do not impair performance in many applications.

COLD FINISHED STEEL BARS

- * Eliminate Heat-Treating Costs
- * Save In Grade and Processing Extras
- * Pay Only For the Grade Needed

IF YOU HEAT TREAT CARBON STEEL PARTS, Bliss & Laughlin Strain-Tempered Carbon steel bars will provide equivalent strength and hardness, with adequate ductility and toughness. You save heat-treating costs, reduce fabricating time and eliminate costly operations formerly required to correct distortion of parts in heat treatment.

IF YOU NOW BUY C-1144 STRAIN-TEMPERED OR COMPARABLE TRADE NAME STEELS, a review of your machining operations may indicate costs can be reduced by switching to a lower-cost, less-machinable grade. We'll gladly send a chart showing comparative data by selecting the grade providing only the machinability needed, you do not pay a premium for machinability you do not use. Savings can range up to \$24.00 per ton.

RESEARCHED AND PRODUCED FOR 30 YEARS. High-strength, furnace-treated steel bars were pioneered by Bliss & Laughlin 30 years ago.

They are backed by nearly 70 years of experience in producing all grades of cold finished steel bars that can be used profitably by customers. In 1929, the first Strain-Tempered bar was produced for automobile drive shafts. By 1931, Bliss & Laughlin supplied 75% of one automotive company's requirements. Today Bliss & Laughlin is furnishing large quantities of standard alloy grade Strain-Tempered bars for drive shafts, as well as for many other purposes requiring high strength. A notorized certified report on the chemical and physical properties accompanies every Strain-Tempered mill shipment, evidence of the exacting quality standards which you can expect from Bliss & Laughlin.

You will be money ahead asking a Biss & Laughlin representative to analyze your present use of high-strength alloy and carbon steels. He will recommend without obligation, the most suitable, least costly alloy or carbon grade from Bliss & Laughlin's extensive line of Strain-Tempered bars.

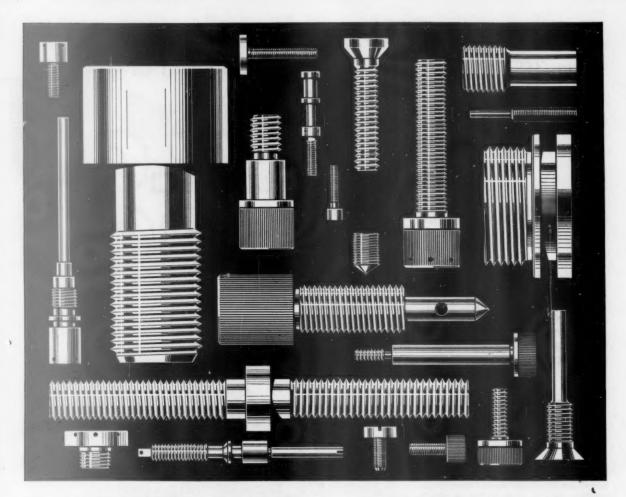
Specialists in Finish, Accuracy, Straightness, Strength and Machinability

BLISS & LAUGHLIN

GENERAL OFFICES: Harvey, III. . MILLS: Harvey, Detroit, Buffalo, Los Angeles, Seattle, Mansfield, Mass.



Leading
Independent
Producer of Cold
Finished Steel Bars



SOCKET-TYPE SPECIALS?

Here are 4 good reasons for checking with SPS

SERVICE. Whether it's a near-standard or an extreme special, you can rely on SPS for a prompt quotation and for delivery on schedule. If your requirements include design consultation, we are prepared to provide it through a nationwide force of field fastener engineers.

EXPERIENCE. No one has invested more in fastener research and development than SPS. No one has pioneered more breakthroughs—in design (UNBRAKO Hi-Life thread), performance (first commercial 260,000 psi bolt), or materials (first practical titanium bolt). Because of this experience we are singularly qualified to meet any conceivable requirement you may have in specials.

DESIGN CONFIRMATION. SPS gives you more than just an accurate estimate of cost. Our engineering and methods people not only interpret your prints and specs; they also analyze them—carefully. If they have a question (socket depth, fillet radius, etc.), they double check with you. Certainly no one knows all the answers, but some-

times we can offer a constructive or economical suggestion that helps assure you a reliable part.

FACILITIES. Whatever your requirement in specials, SPS has the production machinery to produce it in the quickest, most economical manner, under sound quality control. Special configuration, special material, special thread, special plating or surface treatment, special tolerances—we are handling such problems daily on a volume basis.

For service, see your SPS distributor or contact Standard Pressed Steel Co., Special Industrial Fastener Division, SPS, Jenkintown 31, Pa.



where reliability replaces probability



Probing new dimensions in Electronics through Stackpole Research . . .

A MAJOR NEW FERRITE

FOR TELE-COMMUNICATIONS







Permeability: 1800

Temperature Constant: 1.8 x 10⁻⁶ per °C (-20° to 120° C)

Avg. Temperature Coefficient (un-gapped cores): 0.29% per °C (—20° to 85°C)

µ.Q (merit factor): Greater than 200,000 at 100 kc.

... these in brief are the salient electrical characteristics of Stackpole Ceramag 501—a remarkable new low-loss ferrite grade for the 10 kc to 250 kc range. Already revolutionizing the design of carrier-current communications filters, the material shows considerable promise for electronic switching circuits and others as well.

Cup cores of Ceramag 501 no larger than a quarter enable the design of filters with such narrow pass bands that message-handling capacities of communications systems can be increased from 2 to over 90 messages per channel. The extraordinary high gain of filters using Ceramag 501 combine with other inherent advantages—smaller size, no aging or life problems—for a significant contribution to system reliability.

But equally significant is the extremely close tolerances to which these cores are made. To achieve the exact air gap required, Ceramag 501 cups are supplied in matched pairs. Special Stackpole-designed mounting hardware and tuning slugs can also be supplied to assure easy assembly and maximum electrical performance with your own coil designs.

Almost four years in development, Ceramag 501 represents another basic contribution based on magnetic ceramic research and engineering by the oldest commercial ferrite producer in the United States.

Complete details on Ceramag 501 and the remarkable research facilities that made it possible are available upon request to the *Electronic Components Division*, Stackpole Carbon Company, St. Marys, Pa.



STACKPOLE eramage

CERAMAGE FERRITE CORES . VARIABLE COMPOSITION RESISTORS . SLIDE & SNAP SWITCHES . CERAMAGENETE CERAMIC MAGNETS . FIXED COMPOSITION CAPACITORS BRUSHES FOR ALL ROTATING ELECTRICAL EQUIPMENT . ELECTRICAL CONTACTS GRAPHITE BEARINGS, SEAL RINGS ANODES . HUNDREDS OF RELATED CARBON & GRAPHITE PRODUCTS.

Bakery toasts COTTON* as big aid to sanitation



*Cotton toweling supplied to Lewis Brothers Bakeries by Selmier Peerless Towel and Linen Service Co., Carbondale,

 Starting their business in a small log building 35 years ago, producing 75 loaves of bread per day, the Lewis Brothers now own one of the most modern bakeries in the industry. Their present output: 18,000,000 loaves of "Bunny Bread" per year.

In their main plant in Anna, Illinois, where all the baking is done, some 200 employees use cotton toweling exclusively. The reasons: The same as so many other large and small companies. Cotton, they feel, is best for sanitation. It eliminates litter and fire hazard ... eases the burden of housekeeping . . . is easier to service . . . and in many cases, saves valuable dollars for users.

Why not find out how you can save, and have cleaner, neater washrooms in the bargain. For complete information, write for free booklet to Fairfax, Dept: S-10, 111 West 40th Street, New York 19, N. Y.

Here's How Linen Supply Works...



You buy nothing! Your linen supply dealer furnishes everything at low service cost-cabinets, pickup and delivery, automatic supply of freshly laundered towels and uniforms. Quantities can be increased or decreased on short notice. Just look up LINEN SUPPLY or TOWEL SUPPLY in your classified telephone book.

Clean Cotton Towels . . .

Sure Sign of Good Management

Fairfax Towels

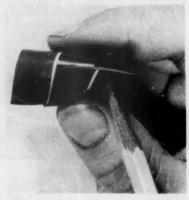


WELLINGTON SEARS COMPANY, 111 WEST 40TH STREET, NEW YORK 18, N.Y.

For More Information Write No. 249 on Place Mark Card-Page 32

Products

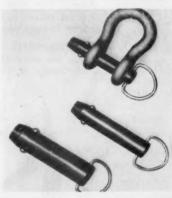
Overlapping Tapes Give Smooth, Even Surfaces



Self-adhering silicone rubber insulating tapes provide smooth, even external surfaces when wrapped in overlapping halves. Triangular cross sections permit tapes to be wound readily on irregular shapes. Each tape is as thick at its apex as the required total insulation thickness. Colored center line guides wrapping and overlapping. Other features include: excellent thermal stability; corona resistance; moisture resistance; high resiliency; thermal conductivity. In eight standard grades. Continental-Diamond Fibre Corp., Sub. of the Budd Co., Newark, Del.

Write No. 54 on Place Mark Card-Page 32

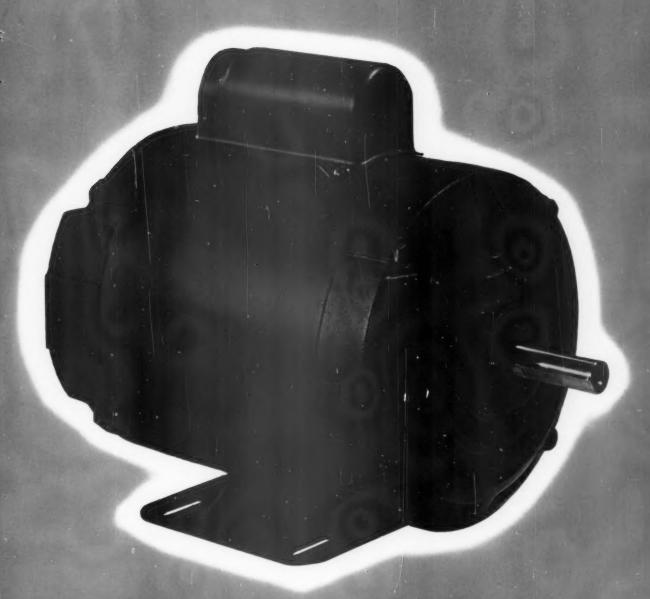
Quick-Realease Pins Are Safe, Economical



Quick-release pins eliminate the need for cotter pins, locknuts, etc., without increased costs. Pins are designed with extra-large

Please turn to page 168

For More Information about ad on facing page Write No. 250 on Place Mark Card—pg. 32→



A NEW Duty Master FHP. for heavy-duty industrial use

RELIANCE : MASTER

ELECTRIC AND ENGINEERING COMPANY

ELECTRIC COMPANY DIVISION

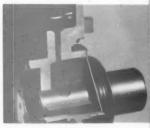
Duty Master FHP.



PROTECTED STATOR



TERMINAL BOARD



SLEEVE BEARING



CENTRIFUGAL CUT-OUT

TOUGH ... COMPACT ... COOL!

A motor that combines new, most-wanted features at no extra cost

Duty Master:

This motor is tough all over ... deliberately designed for heavy industrial duty. Frame is rolled from steel—end shields cast from an aluminum alloy specifically selected for strength. Ball bearings are double-shielded, with lubricant packed into the bearing for life. Sleeve bearings are steel-backed and babbitt-lined for low friction and long wear. "Permawick" oil retaining material provides maximum lubrication to these bearings. Rotor is pressure-cast from high purity, low-resistance aluminum. Varnish impregnated stator resists moisture . . . and adds strength to windings.

Duty Master:

More power per pound ... simple installation, 33% lighter than other preceding motor designs. Good design and materials make the difference. Makers of motor-driven products save on shipping and handling costs. Duty Master's light weight and small size make possible lighter, less complex mounting on equipment. Terminal board provides easy power connection in the front end shield. Cover plate quickly removable. Motor rotation easily reversed by interchanging slip-on connections.

Duty Master:

Up to 10% cooler than other comparably rated motors . . . yet gives you maximum protection. High load

capacity results from new, effective ventilation of critical heat sources. Laminations, coils and rotor are literally rinsed with cooling air through new end shield design. In totally-enclosed, non-ventilated motors, the fan, cast integrally with rotor, circulates the air within the motor at a rate appropriate to efficient transfer of heat to motor frame and end shield. And load carrying capacity of the totally-enclosed fan-cooled motor is increased by a fan and shroud directing air over the frame and end shield.

Duty Master:

Quiet... Smooth... Positive. Resilient mounting composed of metal-rimmed, rubber-cushioning rings that encircle the bearing hubs on each end and support the motor. Motor can be mounted in any position. Single phase starter winding circuit automatically opens at 80% of full load speed. Action is quiet and positive.

Available now in 48 and 56 frame sizes, from conveniently located stocks. Duty Master FHP is made in 1/8, 1/4, 1/4, 1/2 and 3/4 hp. capacitor-start, split-phase and polyphase for 48 and 56 frames; repulsion-start induction-run in 56 frame. Your Reliance Sales Engineer or Distributor has all the facts at his finger tips. Call him or write for Bulletin B-2514. It will be sent to you promptly.

-

Product of the combined resources of Reliance Electric and

Engineering Company and its Master and Reeves Divisions RELIANCE ELECTRIC AND ..

CLEVELAND 17 OHIO

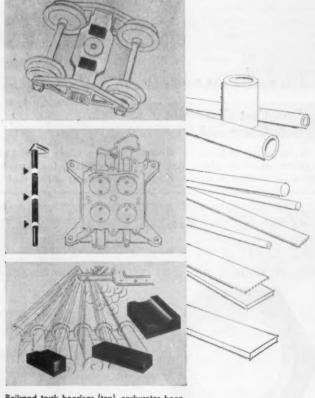
Canadian Division: Toronto, Ontario Sales Offices and Distributors in principal cities R

Duty Master A.c. Motors, Master Gearmotors, Reeves Drives, V+S Drives, Super T D.c. Motors, Generators, Controls and Engineered Drive Systems.



NEW TEFLON BEARINGS

for Non-lubricated Service



Railroad truck bearings (top), carburetor bearings (center), and saddle bearings for textile machinery (bottom)—fabricated from top-quality Tefton* stock by Garlock—offer performance unmatched by any other material.

Now—new bearings of Teflon eliminate lubrication . . . resist extreme temperatures and reactive chemicals . . . drastically reduce downtime.

No finer combination of properties. Bearings of Teflon offer a lower coefficient of friction than any other solid material; they have exceptional thermal stability and are suitable for continuous service to +500°F; they are completely resistant to nearly all chemicals and solvents; they are tough, abrasion-resistant, have no moisture absorption.

Applied where safety and reliability are essential. Teflon is used as journal and thrust bearings, and on other sliding surfaces where lubricated bearings are undesirable, or incapable of operation in extreme temperatures or corrosive conditions, or where there is a possibility of lubricant failure. Teflon bearings afford unexcelled performance where slip-stick motion must be minimized . . . on reciprocating and oscillating systems where the lowest possible static friction must be attained . . . where space and weight savings are essential.

Easily fabricated from high-quality Garlock stock shapes. Teflon bearings can be simply and economically made from standard Garlock tape, bar and rod stock available through local Garlock distributor outlets. Or, if you wish, Garlock will work to your exact specifications in furnishing bearings of all tolerances and size. Whatever the case, the key to best bearing performance is through the use of Teflon stock shapes by Garlock. With years of experience in research and processing of plastics. Garlock is able to recommend and furnish exactly what you need, when you need it, and at the lowest possible cost.

Find out more about Teflon bearings. Consult your local Garlock representative at the nearest of the 26 Garlock sales offices and warehouses throughout the U.S. and Canada.

Or, write for Plastics Catalog AD-177, Garlock Inc., Palmyra, New York.

GARLOCK

Canadian Div.: Garlock of Canada Ltd.

Plastics Div.: United States Gasket Company

Order from the Garlock 2,000 . . . two thousand different styles of Packings, Gaskets, Seals, Molded & Extruded Rubber, Plastic Products

*DuPont Trademark

Products

(Continued from page 164)

stainless steel lock buttons; they will hold against vibration even in oversized holes. Alignment is made easier by solid tapered end. Available in sizes from 1/4 in. up in stainless steel, naval bronze or plated steel, pins can be used as clevis pins, shackle pins, safetylock or shear-load pins, or wherever a quick-connect and disconnect pin is required. Waldick Eng. Co., P. O. Box 398, Huntington Station, Long Is'and,

Write No. 55 on Place Mark Card-Page 32

Standard Plastic Shapes Are Strong, Resist Heat

"Glasrin" structural shapes made of corrosion-proof, reinforced plastic offer exceptional strength to weight ratio. Standard shapes, such as hat sections, channel sections, bar stock and angles, are provided without extra tooling charges. All shapes can be had in one or more of five different fiberglass and resin combinations, in color for identification purposes, each designed for a specific function, such as strength, high heat



or electrical resistance. Tensile strength ranges to 58,000 psi with compression strength to 90,000 psi. All may be machined or drilled, riveted or bonded. Commercial Products Div., Plastic Age Mfg. Co., 14300 Davenport Rd., Mint Canyon, Calif.

Write No. 56 on Place Mark Card-Page 32

Low-Cost Glass Tint Cuts Glare and Heat

A low-cost method of tinting window glass in place provides dramatic savings in air-condition-

ing costs, makes building cooler even without air-conditioning, and reduces damage due to sun-fading. Choice of nine transparent color tints and three frosted tints is offered. Tint is applied by flow



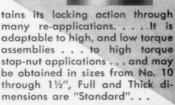
technique, with color appearing to be within glass itself. Coating selects and cuts out by wave length those portions of sunlight which produce the most heat, glare and fade, while permitting the useful portions to pass by. Acorn Glass Tint, 1123 W. Century Blvd., Los Angeles 44, Calif. Write No. 57 on Place Mark Card-Page 32



Three sectors of the tapered portion of the CONELOK nut are preformed inwardly (Fig. 1). When the Nut is applied to a bolt, these conforming sectors are elastically returned to a circular configuration and create an inward and downward pressure which produces intimate contact between the load carrying flanks of the nut and bolt threads (Fig. 2). The shape of the cone sector displacement insures conformity with the mating bolt and maximum fric-

tion contact area. . . . The closed stress path in the locking portion of the nut and the advantageous distribution of locking pressure, produce a locking device of high fatigue life . . . and equivalent locking force is exerted at only a fraction of the stress of any slotted type locknut. CONELOK maintains its locking action through many re-applications. It is adaptable to high, and low torque assemblies . . . to high torque stop-nut applications . . . and may be obtained in sizes from No. 10

Send for brochure which includes complete engineering specifications

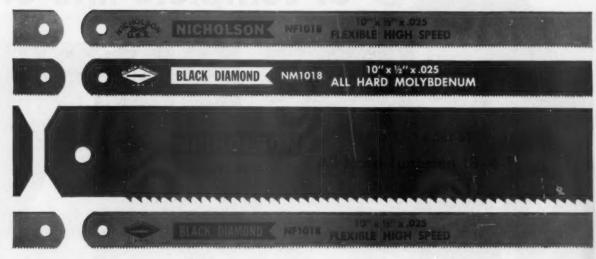




NATIONAL MACHINE PRODUCTS COMPANY

an SPS company 44250 UTICA ROAD UTICA, MICHI

LOOK FOR THESE TRADEMARKS



BUY WITH CONFIDENCE

If you're looking for as fine a blade as money can buy... specify Nicholson or Black Diamond. They're among the best respected brands in the metal-working industry.

Here's part of the reason why...we make our blades from the finest available steel, according to the latest manufac uring methods. We inspect them again and again. We apphove only those blades that meet our high standards.

More important, you can be confident that you're getting quality blades to produce quality work.

A good many industrial blade users and buyers are switching to the Nicholson and Black Diamond brands. The best gauge of the way they like them is the way they keep reordering them. The next time you order blades...order Nicholson or Black Diamond blades. You'll be specifying the economy of top quality.

* Industrial Distributors provide the finest goods and services in the least possible time. Our products are sold exclusively through them.



NICHOLSON



NICHOLSON FILE COMPANY, PROVIDENCE 1, RHODE ISLAND

FILES . ROTARY BURS . HACKSAW AND BAND SAW BLADES . GROUND FLAT STOCK . INDUSTRIAL HAMMERS

"Now get immediate of complete line of



A. T. Gallagher, Manufacturing Superintendent, Delroyd Worm Gearing.

"Here's a shot of our Delroyd Verso worm gear — one of hundreds being boxed and made ready for shipment. Unlike most speed reducers, this Verso unit can be mounted in any position — horizontal, vertical, upside down. • "This is but one model in a complete line of Delroyd worm gear reducers — with the widest range of horsepowers and sizes in the industry."•

*11/8" center distance, fractional horsepowers — to 12" center distance, 152 horsepower. Reducers to 36" center distance with horsepower capacities to 700 are supplied as standard. Larger units to meet any requirement can be supplied on special orders.

delivery DELROYD worm gearing..."

DELROYD worm gearing gives you these superior design features: Exclusive involute helicoid thread form for highest load capacities Centrifugally cast bronze gear for increased mechanical ratings Fan cooled finned housings for higher thermal ratings Lower weight per horsepower More horsepower per dollar **NEW** full color 84-page Delroyd Catalog:

Now available — the worm gear industry's newest, most complete catalog. Contains all basic design and application data, selection charts, ratings and service factors — plus illustrations in full color. For your free copy, write on your company letterhead to: Delroyd Worm Gearing, De Laval Steam Turbine Company, Trenton, New Jersey.



STEAM TURBINE COMPANY

807 NOTTINGHAM WAY TRENTON 2 N .I

01-810



SECRET

Almost 75 years of specializing in a single category of products... washers and stampings... has given our company some established traditions and policies.

One of them is uniformly fair and realistic handling of quotations— to customers and prospective customers alike.

We don't go into orbit over a \$100,000 order, nor do we sniff at one for \$10. Both are welcome here. Both receive equal consideration.

We believe that businesses grow big, in any field of endeavor, because (a) they provide superior products and services, and (b) they treat every customer alike, with consideration and courtesy. And that includes quoting the *lowest* prices consistent with good business and providing us a fair profit.

Milwaukee Wrot Washers are the world's No. 1 seller. Next time you have a washer order to place, or want quotations, or need washers of special types, we would like to have your business.



PURCHASING PERSONNEL . . . Free samples available. Request on your letterhead, mentioning types of washers your company uses most frequently.

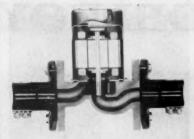


2101 S. BAY ST., MILWAUKEE 7, WIS. • SHeridan 4-0771 • twx MI 277
WORLD'S LARGEST PRODUCER OF WASHERS

For More Information Write No. 255 on Place Mark Card-Page 32

Products

Sealless Canned Pump Works in any Position



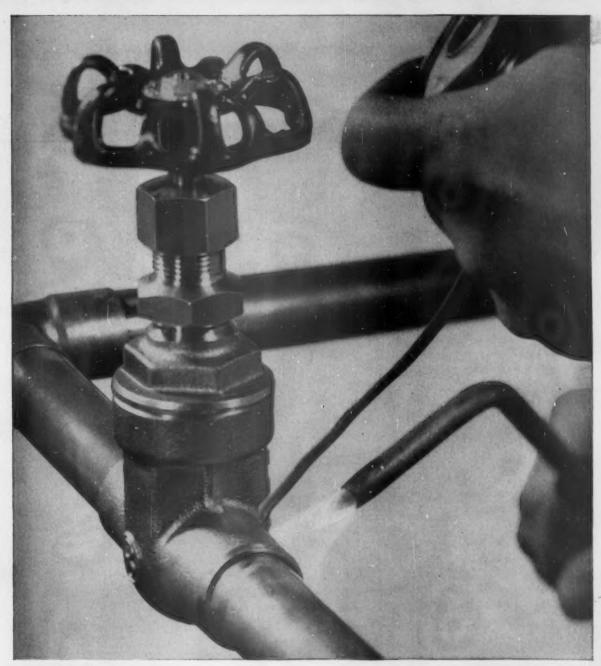
An extremely compact, lowcost, sealless water circulator pump combines motor and pump in single leakproof unit. Canned unit is equipped with rubber flanges for extremely quiet operation and can be installed in any position. Unit measures 6 x 7 in. and weighs only 11 lbs. It handles up to 90,000 btu an hour in systems or zones with 20 degree temperature drop. It is especially intended for use on closed water system free of foreign objects and materials. Suitable for pressures to 30 psi and temperatures to 220 F, model is available for operation on either 115 or 220 volts, single phase, 50 or 60 cycles. Dynapump Div., Fostoria Corp., 1200 N. Main St., Fostoria, Ohio. Write No. 58 on Place Mark Card-Page 32

Lightweight Sander Reaches Tight Spots



A lightweight, compact rightangle sander with a speed of 9000 rpm is especially made for standard 5 in. sanding disc. Model weighs only 2½ lbs. and is designed for one or two-handed operation to achieve maximum

Please turn to page 176





MEN WHO INSTALL O-B solder end valves know the O-B design lets tube ends reach heat uniformly with minimum torch time. Solder flow is smooth. Maintenance is minimized. Continuous service is assured by a safe, leak-tight joint. Ask your distributor for the valve in the orange-and-black box.

OHIO BRASS COMPANY Mansfield, Ohio

B VALV



10074-V

For More Information Write No. 256 on Place Mark Card-Page 32

For More Information about ad on following page Write No. 257 on Place Mark Card—pg. 32→

OCTOBER 10, 1960 ·



ALWAYS AVAILABLE TO SAVE YOU MONEY

You know him well . . . though you may never have met.

Every time you call your Westinghouse distributor, you recognize his courteous and friendly voice. Inside Salesman is his title, but that doesn't begin to describe the jobs he does for you.

Materials consultant, order writer, expediter, trouble-shooter, hub of communications...his main function is service.

He'll take your order on the phone. He knows what's in stock... offers guidance on your purchases... and more than that, he'll make sure you get the order when you

need it.

You've probably marveled at his encyclopedic knowledge . . . able to answer any question you may ask from his "six-foot" shelf of catalogs.

Yes, the Inside Salesman is often the most important man in the whole distributor operation. He's the man you can count on when the pressure's on.

He's one more excellent reason it pays you to do business with your Westinghouse electrical distribution outlet. Call him next time you need fast delivery of quality electrical products.

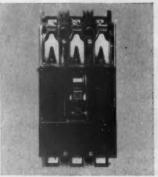
J-94139

Westinghouse

Here are some of the many products stocked by your Westinghouse distributor



Westinghouse dry-type transformers are approximately 50% smaller and lighter than other transformers of equivalent ratings, enabling distributors to carry standard stocks — for immediate delivery — for ratings up to 75 kva.



Westinghouse SAF-T-VUE* breakers are unique in their ability to provide safe, sure circuit protection, yet let you see whether contacts are open or closed.

*Trade-Mark





Westinghouse Life-Line® "A" motors. Standard motors in distributor stocks provide a complete line immediately available for many "special" motor requirements.



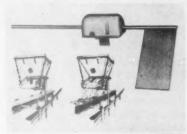
Products

(Continued from page 172)

production with minimum fatigue. Overall height is 3½ in. and length is 6% in., making reaching hitherto inaccessible work easy. High torque, cool running, vibration-free motor is featured. Doeden Tool Corp., Hicksville, Ohio.

Write No. 59 on Place Mark Card-Page 32

Switch Controls Bulk Material Handling



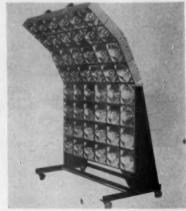
A sturdily constructed flow switch is designed to respond to the lack of material at a critical point in bulk material handling, automatically correcting the difficulty or sounding an alarm. Number of switches can be used in one system, each located at crucial point. They can be installed in all types of feeder and conveyor troughs, in the discharge openings of bins, bunkers and hoppers, in angled or vertical connecting chutes, and in discharge chutes of dryers, crushers, bale mills and other processing equipment. Switch rating is 1 amp. at 115 volts, .5 ampere at 230 volts, AC. Syntron Co., 903 Lexington Ave., Homer City, Pa.

Write No. 60 on Place Mark Card-Page 32

Infrared Baking Unit Is Portable

A portable infrared unit is suitable for a wide variety of baking, heating and drying applications. Casters on base make moving easy. It accommodates lamps up to 500 watts per socket with total possible connected load of 24 kw. Wide-angle gold-plated reflectors provide maximum heating efficiency, and zoned switching provides maximum flexibility of out-

put. Top four sections are adjustable to allow radiation to conform with product contours. Fos-



toria Corp., Infrared Div., Dept. 19, 1200 N. Main St., Fostoria, Ohio.

Write No. 61 on Place Mark Card-Page 32

Air Motor Powers New Belt Sander

A portable belt sander equipped with a burnout-proof air motor will finish flat surfaces under con-

(Please turn to page 180)

FARRELL CASTINGS

A HUGE LINE
Hardly a phase of American Industry is without the use or need of these products.

**

WRITE FOR THE
CATALOGS YOU NEED:

**

CATALOG NO. 21 - SPROCKETS

**

CATALOG NO. 22 - (AND ACCESSORIES)

**

CATALOG NO. 23 - CONYEVING NEEDS

**

CATALOG NO. 24 - WHELIS AND ROLLERS

**

SPECIFICATIONS

We would for the design and production quality of our castings and graduation quality of our castings are castings.

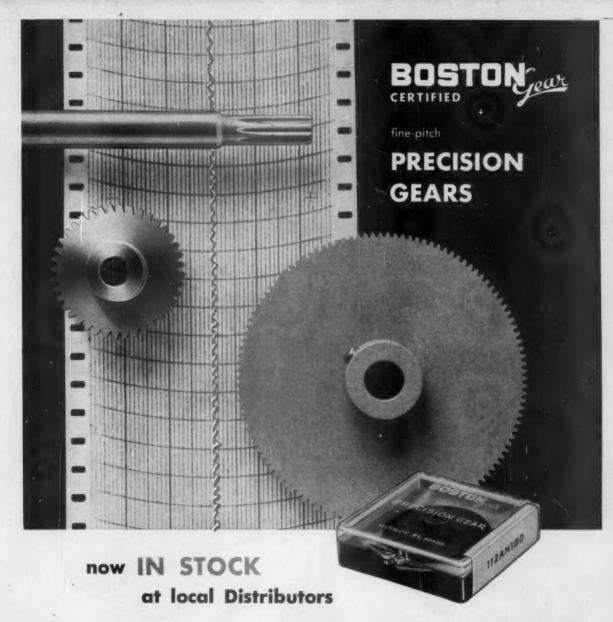
OUR Fiftieth YEAR

We vouch for the design and production quality of our castings . . . and we vouch for the benefit they can be to your operation. However, you must become acquainted with F-C castings to best know how they can serve you.

Please allow us to send you those catalogs which are of particular interest. Your inquiry will be given immediate attention.

FARRELL-CHEEK STEEL COMPANY

For More Information Write No. 258 on Place Mark Card-Page 32



To meet space-age demands for greater accuracy and miniaturization, your BOSTON Gear Distributor now has fine-pitch 20° P.A. PRECISION Spur Gears IN STOCK. Standard sizes range from 48 to 120 D.P. — 10 to 40 teeth in stainless steel, and 42 to 180 teeth in aluminum.

Each Precision Gear is certified by BOSTON Gear to be AGMA Precision Class 1 or better. All materials and finishes conform to Federal and Military specifications.

Precision Gears are individually packaged in plastic containers and are delivered to you factory-sealed for your protection.

Be cost-wise . . . standardize on Boston Gear Precision Gears . . . for certified quality . . for nearby supplies IN STOCK. Call your Distributor for New Catalog PG 160 and complete information. Boston Gear Works, 74 Hayward St., Quincy 71, Massachusetts.

Advt. copyright by Boston Gear Works



Get the NEW PRECISION GEAR Catalog PG 160



CALL YOUR NEARBY BOSTON Jewi

- STANDARDIZATION PAYS -



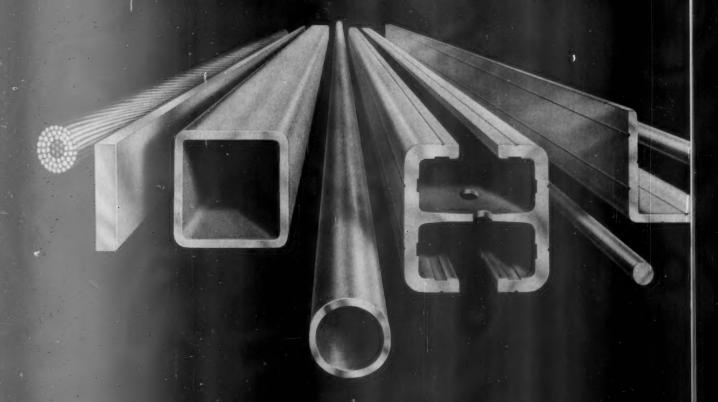


For More Information Write No. 259 on Place Mark Card-Page 32

For I

For More Information about ad on following Write No. 260 on Place Mark Card—pg.

g. 32→ 177 A REPORT FROM ALCOA



To the purchasing agent who must decide on **BUS CONDUCTOR**

How one P.A. saved \$3000 with lightweight aluminum bus

For a new 130,000-sq-ft plant in the Midwest, Alcoa aluminum bus conductor was selected over copper—at a saving of more than \$3000 in direct material costs alone.

With aluminum bus, you get the same currentcarrying capacity in aluminum as in copper—at only half the cost, even though aluminum bus is slightly larger in size.

You save 50% to 60% on initial cost alone . . . plus further savings on handling, installation and maintenance.

Aluminum bends easily. Drills easily. Punches easily. Lifts easily. And it is highly corrosion-resistant, needs no special protection in most corrosive atmospheres. In one plant, for example, Alcoa bus is still going strong after 28 years in the hot, corrosive vapors of an acid solution of zinc sulfate and sulfuric acid.

Availability? Getting Alcoa aluminum bus—and the service that comes with it—is no problem. With the number of distributors in our network, we'd be very surprised if there isn't one within a few hours' delivery time of your plant.

Get the facts now. Ask your Alcoa distributor to give you the facts about aluminum bus. If you would like the name and address of the distributor nearest you, write to Rome Cable Division of Alcoa, Dept. 14-100, Rome, N. Y.

NOW YOU CAN GET ALL 4 FROM ROME



Copper wire and cable



Aluminum wire and cabl

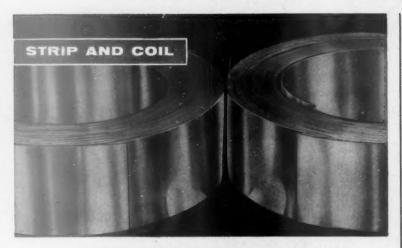


Aluminum conduit



Aluminum bus conductor

ROME CABLE DIVISION OF ALCOA



MILLER OFFERS YOU

ONE-SOURCE SERVICE

ON SPECIALTY ITEMS



Long a leader in the tailor-made production of brass, bronze and nickel silver strip, Miller now offers the same expert technical help... the same meticulously produced high-grade metal... the same dependable delivery schedule on copper and copperalloy tube in special shapes and sizes. And, as always, "phosphor bronze is the main line—not a side line at Miller."

POLLING MILL DIVISION Meriden, Connecticut



Tube Subsidiary

A. H. WELLS, INC.
Waterbury, Connecticut

For More Information Write No. 261 on Place Mark Card-Page 32

Products

(Continued from page 176)

tinuous duty conditions. Sander can be used on sheet metal, marble and granite, wood, plastic, and fiberglass. Chief advantage of the tool is its ability to withstand abnormal abuse without the dan-



ger of shock or motor burnout. It has a 1.5 hp governed air motor that delivers and maintains a belt speed of 1120 sfpm under load. It is 16" long, weighs 15 lbs., and drives a standard 3" X 24" belt. Buckeye Tools Corp. 5003 Springboro Pike, Dayon 1, Ohio. Write No. 62 on Place Mork Cord—Page 32

Compact Gun Sprays Epoxy Resins



A hand-held jet spray gun is capable of depositing epoxy resins onto any surface for coatings of virtually any desired thickness. Technique provides epoxy coating that is extremely durable and that does not need further curing. In addition, spray technique permits extreme penetration of the resins in coating parts such as motor stators and rotors. Efficient bond permits use of thin coatings. Plasmadyne Corp., 3839 S. Main St., Santa Ana, Calif.

Write No. 63 on Ploce Mork Cord—Page 32



Apron Conveyors-excellent for horizontal or inclined conveying.

JEFFREY CONVEYORS TO MEET YOUR MATERIALS HANDLING NEEDS

COMPONENTS, ACCESSORIES FROM STOCK

The plant engineer must treat every conveying job as a brand new project; the material to be moved has its own peculiar characteristics; distances, elevations and surroundings vary to affect operating conditions. Selecting a conveyor requires a thorough knowledge of the factors involved.

That's where Jeffrey's 75 years of materials-handling experience steps in to help. Based on this know-how, our engineers recommend the type of conveyor that will move the material most efficiently. They help plan it for maximum performance at most economical first cost; will even supervise installations.

Jeffrey conveying equipment maintains high production, lightens labor's burden and reduces operating costs. Send for data. The Jeffrey Manufacturing Company, 784 North Fourth Street, Columbus 16, Ohio.



Vibrating Conveyors-transport hard-to-handle materials easily.



Spiral Conveyors and Bucket Elevators team up for horizontal and vertical travel.



Belt Conveyors - move materials swiftly across country or on short hauls.

Bin Valves • Car Pullers • Chains • Idiers • Pulleys

· Sprockets · Take-ups

· Buckets · Pillow Blocks

JEFFREY

CONVEYING • PROCESSING • MINING EQUIPMENT...
TRANSMISSION MACHINERY...CONTRACT MANUFACTURING

Products

Quick-Acting Micrometer Is Easily Read



A quick-acting, 1/2 in. dial micrometer is ideal for repetitive measuring operations. Simple top reading dial allows rapid and easy reading. It has measuring range of 0-1/2 in. and will measure in 2 in. from the edge of a flat plate, or to the center of a 4 in. sheet. Deep-throated frame and design permit use with one hand. Adjusting nut assembly provides full engagement with the spindle thread, making ordinarily delicate instrument shock-proof. J. T. Slocomb Co., South Glastonbury, Conn.

Write No. 64 on Place Mark Card-Page 32

Truck Tire Regroover Pays for Itself

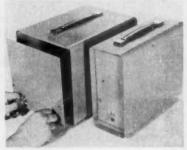


A truck tire regroover which adds thousands of miles of use to each tire before recapping is necessary quickly pays for itself. Machine makes use of rubber that is wasted when tire is buffed down in preparation for recapping.

Heated blade will cut any zig-zag pattern or straight groove, on any tire from 7:50 x 20 through 11:00 x 22. Portable one-man unit is simple to operate and regrooves tires right on vehicle. Both inner and outer dual tires on tractors or trailers may be regrooved. Honeycutt Tool Mfg. Co., 315 Austin St., Houston 2, Texas.

Write No. 65 on Place Mark Card-Page 32

Stock Instrument Cases Have Wide Application

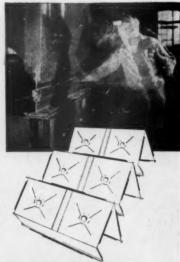


Off-the-shelf cases of rugged steel construction for test instruments feature plug-in chassis which is quickly and easily locked in or removed by a half-turn of convenient cam lock. Open-sided chassis permits use of snap-in terminal cards mounted in vertical planes of circuitry. All leads are brought to easily accessible pointof-check that can be graphically identified with circuit legends. Functional hooded styling protects indicating lights, dials, switches, etc., mounted on front panel. In 2, 4 and 8 in. widths; height 10 in. Alden Products Co., 93 N. Main St., Brockton, Mass.

Write No. 66 on Place Mark Card-Page 32



"What kind of deal did you offer him?"



consistency...

Consistent, predictable, results throughout production processes must begin with the consistent quality of materials. J & L consistent quality stainless steel will give predictable results time after time...order after order.

The service offered by your J & L stainless steel distributor is consistent... and predictable, too. He's as near as your telephone. You'll find that he can further reduce the cost of using stainless steel by providing a complete selection of materials. He can save you the capital investment required to maintain long term inventories. He can provide a wide variety of preproduction services, and reduce your overhead for stocking, handling, accounting and obsolescence.

Your J&L distributor can provide you with the consistent quality stainless steel you need, as you need it, when you need it. He can serve you better because J&L serves him better. J&L's own staff of technical specialists and metallurgists are at the call of your J&L distributor to give you the technical assistance, even advanced research, you may need.

For better production and better service, call your J&L distributor—call Western Union Operator 25, today.

J&L-a leading producer of stainless steel
and precision cold rolled strip steels



STAINLESS

SHEET • STRIP • BAR • WIRE
For More Information about ad on facing page
Write No. 263 on Place Mark Card—pg. 32→
PURCHASING



WHEN YOU NEED RESILIENCE PLUS ...



RESISTANCE TO HEAT

A million tons of hot coke have not harmed this neoprene belt.



RESISTANCE TO FLAME

Neoprene coated firewalls for aircraft pass this flame thrower test.



RESISTANCE TO COLD

Neoprene remains flexible even at -65° F.



RESISTANCE TO OIL

oprene retains its properties in contact with oil and grease.

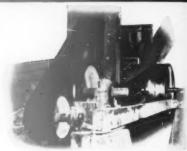


RESISTANCE TO SUN AND WEATHER

After 25 years' exposure, neoprene cable (bottom) shows no surface cracking.



Neoprene tire sidewalls resist ozone cracking.



RESISTANCE TO ABRASION

Tough neoprene gives dependable service in severe applications.



RESISTANCE TO CHEMICALS

Neoprene assures protection against most acids and chemicals.



RESISTANCE TO IMPACT

Neoprene has outstanding resilience, resists permanent distortion.

SPECIFY VERSATILE DU PONT NEOPRENE

synthetic rubber

A quarter century of industrial service has proven that versatile Du Pont neoprene, with this balanced combination of properties, can meet a range of severe service requirements. Neoprene products are

available from rubber goods manufacturers and distributors. For additional information, write E. I. du Pont de Nemours & Co. (Inc.), Elastomer Chemicals Department P-10, Wilmington 98, Delaware.



BETTER THINGS FOR BETTER LIVING ... THROUGH CHEMISTRY

NEOPRENE MAKES TODAY'S PRODUCTS BETTER . . . TOMORROW'S PRODUCTS POSSIBLE

For More Information Write No. 264 on Place Mark Card-Page 32

For More Information about ad on facing page Write No. 265 on Place Mark Card—pg. 32→ PURCHASING



Revere helps "fit the metal to the job"

AND A PUMP MANUFACTURER FABRICATES
SUPERIOR PARTS WITH GREATER EASE...INCREASES TOOL LIFE

An important part of the submersible pumps made by Tait Manufacturing Company is the brass diffuser casing you see above. This part had formerly been made of ferrous metal. While satisfactory as a pump part it was difficult to work and draw . . . at the same time tool life was short.

One of Revere's Technical Advisors was asked to study the problem. Revere Cartridge Brass Strip of a certain temper was recommended, samples submitted, and, after extensive tests, was approved. The customer has found that not only does the diffuser casing, made of Revere Brass, perform well in the pump, but it also has superior drawing properties, is more easily worked, and tool life has been substantially increased.

This meticulous attention to "fitting the metal to the job" also

This meticulous attention to "fitting the metal to the job" also resulted in Tait Manufacturing Company's specifying Revere seamless leaded brass tubing for the upper body shell of its submersible pumps. Here the application called for extremely close straightness and roundness control which meant special attention to detail on the part of the Revere mills.

Why not put the extensive knowledge of Revere's T.A. Service to work for you? With the wide variety of metals at your disposal, perhaps Revere can help you select the one best suited for the job, with a resultant saving of money while improving product quality.



REVERE COPPER AND BRASS INCORPORATED Founded by Paul Revere in 1801

Executive Offices; 230 Park Avenue, New York 17, N. Y. Sales Offices in Principal Cities. Mills: Rome, N. Y.; Balbimore, Md.; Chicago and Clinton, Ill.; Detroit, Mich.; Los Angeles, Riyerside and Santa Ana, Calif.; New Bedford and Plymouth, Mass.; Brooklyn, N. Y.; Newport, Ark.; Ft. Calhoun, Neb.

Distributors Everywhere



Cut chain costs! Gain the economies of longer service and a better safety record with TM Alloy Slings. Taylor's sure-grip Tayco Hooks and complete heat-treating are strong contributing factors this economy. Factory-assembled. Test Certificate furnished. Call your distributor, steel warehouse, hardware wholesaler or write for Bulletin 14A today.

S. G. TAYLOR CHAIN CO., Inc.

Plants: Hammond, Indiana 3505 Smallman St., Pittsburgh, Pa.

Prompt repairs on alloy slings in both plants.



CHAIN SINCE

For More Information Write No. 266 on Place Mark Card—Page 32

Products

A-c Welder Stresses Low Cost.



An a-c welder stresses excellent design at minimum cost. Basic unit is single phase, transformer type a-c welding power source. built to operate from 230/460 volts primary and NEMA rated as a 500 ampere machine. Welder has open circuit voltage adequate for excellent starting with any a-c stabilized electrode. A wide variety of optional equipment is available. Unit has many applications, in shipyards, transportation and construction industries, and for general heavy fabrication. Westinghouse Electric Corp., WEST-ING-ARC Dept., P. O. Box 2025, Buffalo, N. Y. Write No. 67 on Place Mark Card-Page 32

Bearing Cleaning Tools Save Time and Work



The greasing and cleaning of ball and roller bearings is simplified by a new tool that will flush and relubricate bearings in a fraction of the time usually required. The tools have no moving parts to be maintained or wear out, giving them an unlimited service life. Sets of tools can be furnished to fit most all size ranges required. Kit AF-14 consists of five pieces to service bearings ranging from 5%" to 13%" outside diameter. Bearing Inspection, Inc., 3311 East Gage Avenue, Huntington Park, Calif. Write No. 68 on Ploce Mork Card—Page 32

Ice-Melting Compound in Handy Package



A handy fiber-board 25 lb. "carry-out" package provides a two-week supply of ice and snow melting compound for the average 25.000 sq. ft. building. Moistureproof plastic inner bag protects compound against deterioration. Compound is composed of thin, crystalline chips, 40% greater in bulk then chemical pellets or salt. Chips stay put when applied, will not roll or blow away. Leaves no residue and is harmless to concrete, asphalt and vegetation. Also in fiber drums or bulk. Speco, Inc., 7312 Associate Ave., Cleveland 9,

Write No. 69 on Place Mark Card-Page 32

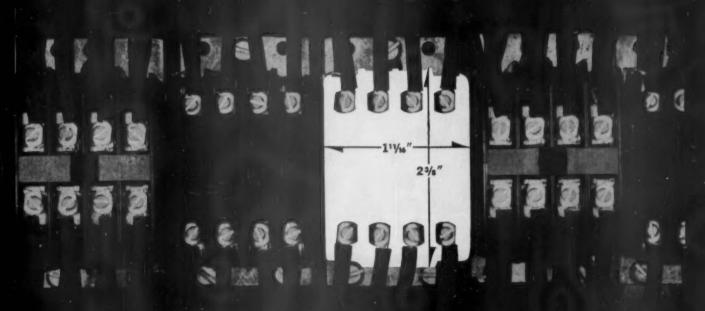
Insulating Rod Comes In Special Shapes

Nine new special shapes of electrical insulating rod are made of fiber glass reinforced polyester. Rod is designed for applications requiring insulating structural, mechanical or spacing members—push rods, actuating linkages, clamping blocks, tie bars, bracing members, stator cell U-wedges, (Please turn to page 190)

For More Information about ad on facing page
Write No. 267 on Place Mark Card—pg. 32->
Purchasing

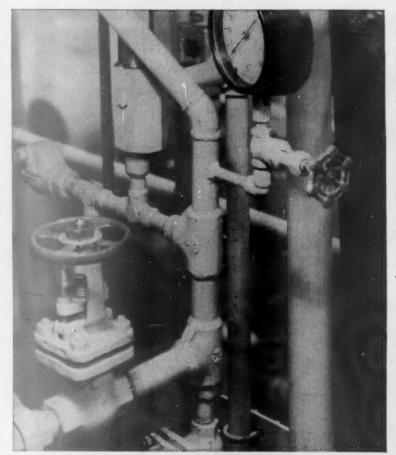
new machine tool relay cuts panel space

EGGE



Actual size photo of machine tool panel





Forged stainless steel 150 lb. socket weld W-S Fittings on tank piping at E. R. Squibb & Sons plant, New Brunswick, N. J.

To Beat Corrosion's Bite

-W-S FORGED 150 LB. STAINLESS FITTINGS

They're ideal for standard pressure services (300 p.s.i. cold, non-shock and 150 p.s.i. steam pressure) requiring corrosion resistance or toughness at low temperatures.

But maybe your next installations call for forged aluminum fittings, or forged carbon steel fittings, or forged stainless and alloy fittings for higher pressures. W-S specializes in designing and making them all to top standards of safety and high strength . . . with outstanding resistance to shock, heat, vibration.

For specifications and distributor locations, write Forge & Fittings Division, H. K. Porter Company, Inc., Box 95, Roselle, N. J.

FORGE AND



FITTINGS DIVISION

H. K. PORTER COMPANY, INC.

PORTER SERVES INDUSTRY with steel, rubber and friction products, asbestos textiles, high voltage electrical equipment, electrical wire and cable, wiring systems, motors, fans, blowers, specialty alloys, paints, refractories, tools, forgings and pipe fittings, roll formings and stampings, wire rope and strand.

For More Information Write No. 268 on Place Mark Card-Page 32

Products

(Continued from page 186)

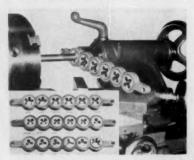
spacing sticks in dry-type transformers. A continuous fiber glass filament runs through entire length for high strength. A 130°-



150°C material, it has arc resistance (150 sec., ASTM D-495), low moisture absorption (0.4% maximum), and excellent dimensional stability under heat and high humidity. The Glastic Corporation, 4321 Glenridge Road, Cleveland 21, Ohio.

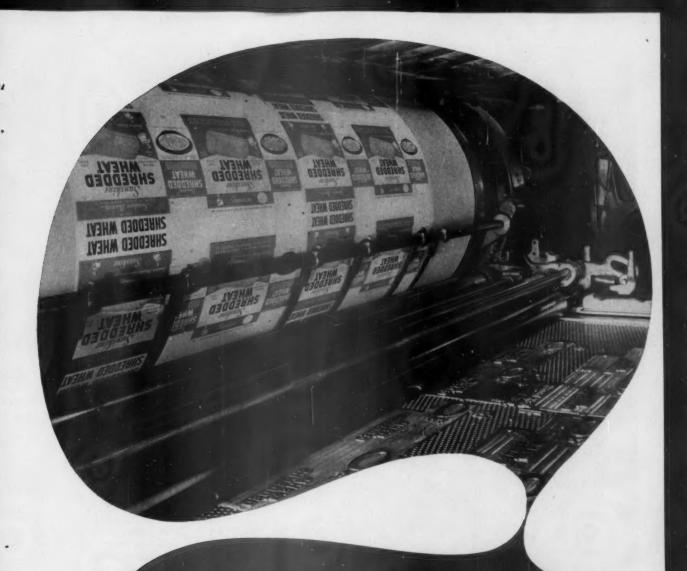
Write No. 70 on Place Mark Card—Page 32

Multiple Threading Tool Saves Machine Time



A time-saving threading tool for use in maintenance and machine shops will cut eighteen different thread sizes from 1/8 to 1/2 in. in U.S.S. and S.A.E, plus 1/8 and 1/4 in. pipe threads. Dies are permanently mounted in three tools (six dies in each) and are always ready to use. Face of each die is parallel with back of holder, making it simple for any user to cut threads on any lathe, pipe machine, drill press or by hand. Holder is precision-made of high strength aluminum, guaranteed against breakage. Dies are split adjustable and made of high-grade alloy tool steel for long service. Mohr Tool & Mfg. Co., Box 630, Maywood, Ill.

Write No. 71 on Place Mark Card—Page 32
For More Information about ad on following page
Write No. 269 on Place Mark Card—Page 32→
PURCHASING



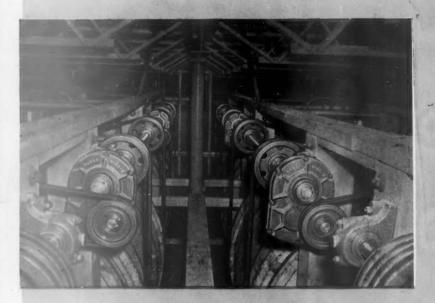
ESSENTIAL TO SUPERIOR PRINTING ... THE RIGHT PAPERSOARD

That's why it's so important to choose a supplier who specifies a board best suited to your printing needs, rather than his own reserves. As the world's largest producer of paperboard packaging, CCA makes all types and grades of boxboard. Because we have nation-wide experience in designing and developing packaging, our experts are equipped to specify exactly the boxboard—standard or custom—that is best suited to your nears.



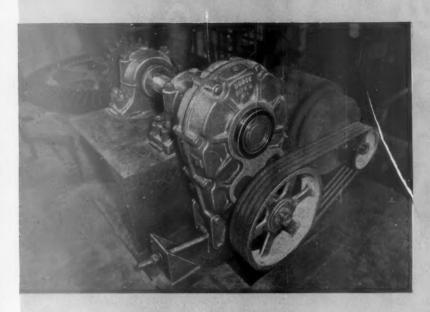
CONTAINER CORPORATION OF AMERICA

World's largest producer at paperboard packaging Chicago 3...Local service from 122 strategically located manufacturing centers



SHAFT MOUNTED SPEED REDUCER

Install it anywhere—with minimum time and effort. Here is an overhead installation on tanning drums. Torque-Arm reducers are resistant to acid fumes, salt water environment, moisture.



SHAFT MOUNTED SPEED REDUCER

Can be positioned any place on the entire length of the shaft. It locks into place on both sides of the housing. Note modified torque arm on this installation on a mixer in a beverage plant.

The Speed Reducer Idea that

Two things account for the record popularity of Dodge Torque-Arm Speed Reducers. First, they cost less to install since they require no foundations, sliding motor rails or flexible couplings. Second—and most important—these modern reducers as developed by Dodge perform brilliantly. Tens of thousands of installations underscore Torque-Arm dependability. Torque-Arm is America's quality shaft mounted speed reducer!

Torque-Arm has been so extensively adopted by industry that today models are available for a vast range of applications. The Torque-Arm line offers you capacities up to 170 hp—output speeds from 10 to 400 rpm—in single and double reduction series—with 5 to 1, 15 to 1 and 25 to 1 ratios. Models for vertical or inclined shaft operation are available—as well as special-application versions such as flange mounted, right

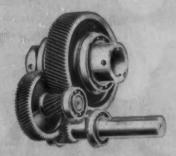


Rugged semisteel housing— a solid backbone for solid service

Here is a tough, corrosion-resistant housing with the strength to hold bearing seats in line for the life of the unit. Perfect shaft and gear alignment are assured by doweling the matched halves together and boring in line. No gear is overhung. Loads are carried easily, contributing to Torque-Arm's long life and high efficiency—97% in double reduction models, almost 99% in single!

AGMA rated gears— quality-guarded by continual tests

These helical gears have soft cores to withstand shock—and hardened surfaces to resist wear. Their quality is guarded in manufacture and assembly by the most modern methods of quality control, including inspection for runout, tooth spacing, helical lead and involute profile. They run quietly, mesh precisely. Teeth are crown shaved for maximum contact area. Gears are shrunk on their shafts to prevent shifting.





Modern double-lip seals keep oil in and dirt out

Modern synthetic, double-lip seals of the highest quality keep oil in and dirt out of the reducer case. These seals offer protection for the unit from dust and dirt and just as effectively insure cleanliness when operating in laundries, textile mills, food processing plants.

Re-ally Clicked!

angle and extended input shaft styles. Optional equipment includes a positive, sealed-in backstop and a positive overload release.

Ask your local Dodge Distributor. Or write us for our 64-page Torque-Arm Speed Reducer Bulletin, complete with engineering data and easy selection tables.

DODGE MANUFACTURING CORPORATION
1300 Union Street • Mishawaka, Indiana



CALL THE TRANSMISSIONEER—your local Dodge Distributor. Factory trained by Dodge, he can give you valuable help on new, cost-aving methods. Look under "Dodge Transmissioneer" in the white pages of your telephone directory, or in the yellow pages under "Power Transmission Machinery."





Faultless manufactures over 10,000 caster types, sizes, and varieties . . . casters for every conceivable purpose . . . The Casters to move your products easily, in quantity, economically! Faultless Casters are engineered and tested to roll smoothly and efficiently under any load from 15 lbs. to 15,000 lbs. per caster. And Faultless manufactures a complete selection of swivel, rigid, plate, and stem casters, plus a wide variety of special application casters. This complete selection from one manufacturer—Faultless Caster Corporation—includes The Casters to reduce materials handling costs and increase efficiency at your plant.

Your Faultless Industrial Distributor, or your nearby Faultless Sales Engineer can supply you with detailed information on the complete Faultless Caster line. Also, your Faultless Distributor maintains a substantial stock of Casters for immediate shipment.





Faultless Caster Corporation

EVANSVILLE 7, INDIANA

Branch Offices in principal cities of the U.S.; see the Yellow Pages of the telephone book under "Casters." Canada: Stratford, Ontario

For More Information Write No. 271 on Place Mark Card-Page 32

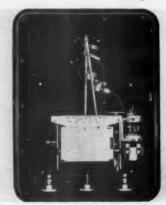
Products

Multi-Purpose Cleaner Is Safe and Effective

A new cleaning compound is so versatile that it can be used to clean floors, tanks, or as a general steam cleaner. In all applications it is completely safe for personnel, fire-proof, effective is hard or soft water, rinses freely, leaves no scum, and resists scale formation. Known as LE#18 Multi-Purpose Cleaner Compound, the product removes grease, glue, and other stubborn dirt. It is useful to clean tank and bus bodies, to remove glue and ink from corrugatedbox-making equipment, and as a heavy duty cleaner for greasy construction, manufacturing, and oilfield equipment. Lubrication Engineers, 2809 Race St., Fort Worth, Texas.

Write No. 83 on Place Mark Card-Page 32

Recorder Will Operate Unattended 36 Days



A strip chart recorder provides a record of flow, pressure and temperature measurements for periods up to 36 days without attention. Instrument is cartridgetype and makes possible reduced chart changing costs. Chart capacity is 38 ft., and each cart-(Please turn to page 198)

FOR PLACE MARK

PAGE 32

For More Information about ad on facing page Write No. 272 on Place Mark Card—pg. 32→ PURCHASING Allis-Chalmers uses

RYKON Grease

in bearing shield

-offers farmers

better disc harrow

Can RYKON Grease help you improve your product? Situation: Bearings of a disc harrow in service are always turning in dusty conditions, oftentimes completely covered with soil. Such bearings in the Allis-Chalmers harrow are protected with grease-coated rubber shields. The grease guards against dirt getting past the shield and into the bearing.

What was done: Allis-Chalmers project engineer in the LaCrosse, Wisconsin plant, Maynard Walberg, called Fred Parkinson, Standard Oil lubrication specialist, for a sample of Rykon Grease. In conditions simulating field service, Rykon Grease was tested. Bearings were rotated in the most abrasive dirt available—Mississippi sand with a high quartz fraction.

What happened: Tests were started and run to destruction. Prior to the use of RYKON Grease, bearing failures occurred at 500 hours. On switching to RYKON Grease, these tests were pushed to 2,000 hours. At this point, tests were stopped. Bearings were still in operating condition.

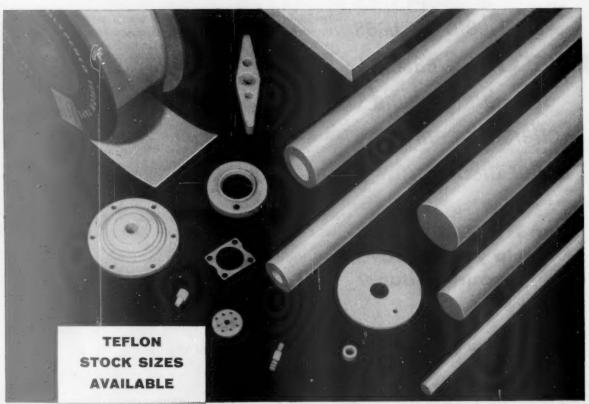
What you can do: Find out how RYKON Grease might help you offer your customers a better product. Inquire of the Standard Oil lubrication specialist nearest you anywhere in the 15 Midwest or Rocky Mountain states. Or write Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

You expect more from

STANDARD

and you get it!





Diameter: 1/4" to 71/4" in various lengths

TUBING (rigid)
O.D. ½" to 12" I.D. 1/4" to 63/4" depending on O.D.

Thickness: 1/16" to 2" Sizes: 12" x 12", 24" x 24", and 48" x 48"

Thickness: .001" to .125" Widths: 1/4" to 18" Ten fade-proof colors

SPACHETTI TUBING

AWG sizes 30 to 0. Thin and regular wall thickness Ten fade-proof colors for coding

THIN WALL TUBING

I.D. 1/6" to 1" Wall thickness: .030" to .050"

ROUND AND SQUARE BEADING

Round: Diam. .030" to .150" Square: .020" to .156" across the sides

For 100% Controlled Quality -Specify POLYPENCO®

... a complete range of TEFLON*

and other TFE Fluorocarbon Stock Shapes

You make the most of the valuable properties of TFE fluorocarbon resin products when you specify POLYPENCO. The reason? All stock produced by The Polymer Corporation of Pennsylvania is inspected and tested from the raw material to the finished product. Thus, constant electrical and physical properties, and maximum dimensional stability are maintained.

New, exclusive Ultrasonic testing provides quick, dependable detection of internal voids and flaws to assure you uniformly dense shapes "clear through" for cost saving production and reliable finished products.

POLYPENCO Teflon rod, tubing, sheet and tape are available nation-wide in the sizes to meet your requirements. Custom fabrication is also available, if desired.

POLYPENCO's engineering staff stands ready to help you solve any specific problem. For their assistance or for technical information and purchase specifications write to The Polymer Corporation of Pa., Department CB, Reading, Pa.

Prompt Delivery from Sales Representatives and Distributors coast-to-coast.



Export: Polypenco, Inc., Reading, Pa., U.S.A. *DuPont Trademark for fluorocarbon resins





"You can save more than half at our newest low rates; and perhaps even more on heavier weights"

-says the Railway Express Eager Beaver



New low rates apply on a large number of commodities—and savings are substantial, up to 60% in some instances. And there's no extra charge for door-to-door delivery within published limits. Keep this in mind when you're shipping or receiving. Call your local Railway Expressman today for details of our Eager-Beaver Service! (You get Eager-Beaver Service when you ship Air Express, too!)

LET THE EAGER BEAVER DO IT!



For More Information Write No. 274 on Place Mark Card-Page 32

CLEVELAND CONTAINER'S

HEAVY-WALL TUBING

CUTS MATERIAL HANDLING COSTS

The use of heavy-wall paper tubing as an important pallet component is a new idea in material handling technique! Efficient and unique, it is a concept that is quickly applied to many kinds of products resulting in immediate savings.

LOWER PALLET COST

The economy starts with a lower unit cost! Cheaper than wood, heavy-wall paper tubing is available in all popular diameters, wall thicknesses and lengths.

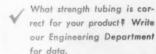
EXPENDABLE

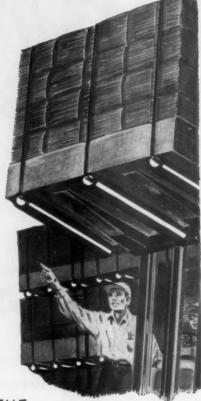
Heavy-wall paper tubing is completely expendable! No return freight costs! No pallet damages! Less capital tied up in pallet investment!

REDUCES WEIGHT

but supports a heavy load. Provides a "shock-absorber" effect which guards against load shifts and damage.

Illustrated is heavy-wall tubing used with steel strapping to form a pallet for corrugated paper.





THE

CLEVELAND CONTAINER

Plants and COMPANY
Sales Offices: 6201 BARBERTON AVE. • CLEVELAND 2, OHIO

ALL-FIBRE CANS - COMBINATION METAL AND PAPER CANS

ALL-FIBRE CANS - COMBINATION METAL AND PAPER CANS SPIRALLY WOUND TUBES AND CORES FOR ALL PURPOSES

CLEVELAND CONTAINER CANADA, LIMITED
Plants & Sales Offices: Toronto & Prescott, Ont. - Sales Office: Montreal

Sales Offices: New York City Washington, D.C. Rochester, N.Y. West Hartford, Conn.

> Abrasive Division at Cleveland

For More Information Write No. 275 on Place Mark Card-Page 32

Products

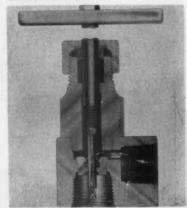
(Continued from page 194)

ridge, including chart, storage spool and rewind spool is removed as a unit, saving time.

American Meter Co., 920 Payne Ave., Erie, Pa.

Write No. 85 on Place Mark Card—Page 32

Valve Gives Ultra-Low Control of Flow



With a valve for the control of ultra-small amounts of liquid or gas a Cv (flow coefficient) of as low as .003 to zero can be controlled linearly over a stem travel of % in. Higher ranges are also standard. At 5000 psi valve can be throttled from 3 ccpm to 5 gpm. At lower pressures valve can deliver as little as ten drops per hour. Pressure ratings are to 10,000 psi. Standard materials are carbon steel, stainless steel or bronze. General-American Valve Co., Corona Del Mar, Calif. Write no 86 on Place Mark Card—Page 32

Epoxy Compound Stronger Than Concrete

An epoxy resin concrete adhesive for bonding new to old or old to old concrete is tronger than concrete itself. Adhesive is recommended for spalling or scaling concrete areas, broken slabs or cracks. It secures overlays, seals against water and salt intrusion, bonds traffic markers or extruded curbing, bonds ready mixed concrete to masonry or metal surfaces, and is bonding agent on steel or concrete surfaces prior to to using a granite grout. A. C. Horn Companies, Div. of Sun Chemical Corp., 2133 85th St., North Bergen, N. J.

Write No. 87 on Place Mark Card-Page 32

Detroit

Chicago

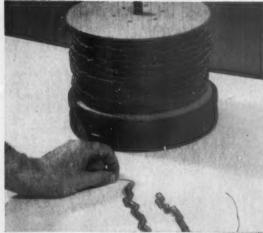
Memphis

Los Angeles

Plymouth, Wis.

Jamesburg, N. J.

Reduce your assembled costs





with new Spring-Flow® packaging

... more efficient handling, storing, sorting, orienting, feeding, placing of springs for installation

To production planners, Spring-Flow packaging opens up a world of possibilities for assembling A.S.C.-made springs, small stampings, and wire forms into your products easier and faster. It solves many problems caused by intricate shapes, tangling, loss by spoilage; maintains critical tolerances, uniform quality; simplifies inventory control and storage.

> To learn how Spring-Flow may solve your problem, contact the nearest A.S.C. Division, or write for Spring-Flow booklet giving additional

Associated Spring Corporation

General Offices: Bristol, Connecticut

Wallace Barnes Division, Bristol, Conn. and Syracuse, N. Y. F. N. Manross and Sons Division, Bristol, Conn. Dunbar Brothers Division, Bristol, Conn.

Wallace Barnes Steel Division, Bristol, Conn. Canadian Subsidiary: Wallace Barnes Co., Ltd., Hamilton, Ont. and Montreal, Que. Puerto Rican Subsidiary: Associated Spring of Puerto Rico, Inc., Carolina, P.R.

Raymond Manufacturing Division, Corry, Penna. Ohio Division, Dayton, Ohio

Cleveland Sales Office, Cleveland, Ohio Chicago Sales Office, Chicago, III.

B-G-R Division, Plymouth and Ann Arbor, Mich. Gibson Division, Mattoon, III.

Milwaukee Division, Milwaukee, Wis.

Seaboard Pacific Division, Gardena, Calif.

For More Information Write No. 276 on Place Mark Card-Page 32



All Types of SEMS and Pre-assembled Fastener-Washer Combinations

Whatever you require in pre-assembled washers ... SEMS, and neoprene or nylon washer STAPS... in thread-forming and thread-cutting tapping screws, or machine screws...with slotted, Phillips or Hex heads . . . P-K can supply them all through your local P-K Distributor.

P-K SEMS reach your assembly line pre-assembled, ready for instant use. Washers cannot come off—can never be mislaid or misplaced—insures washers on screws...not on the floor! Double inventory and double parts handling is completely eliminated.

P-K SEMS can be hopper fed for automatic driving. Inspection rejects due to omitted lock washers are impossible-fastenings stay tight and firm. P-K Sems assure concentric washer seating.

STAPS® are standard P-K fasteners, pre-assembled with nylon or neoprene washers for effective control of leaks, squeaks, crazing and electrolysis, in all types of metal structures and assemblies.

Your nearby P-K Distributor can meet your needs. Call him for samples and complete information.

LON fasteners

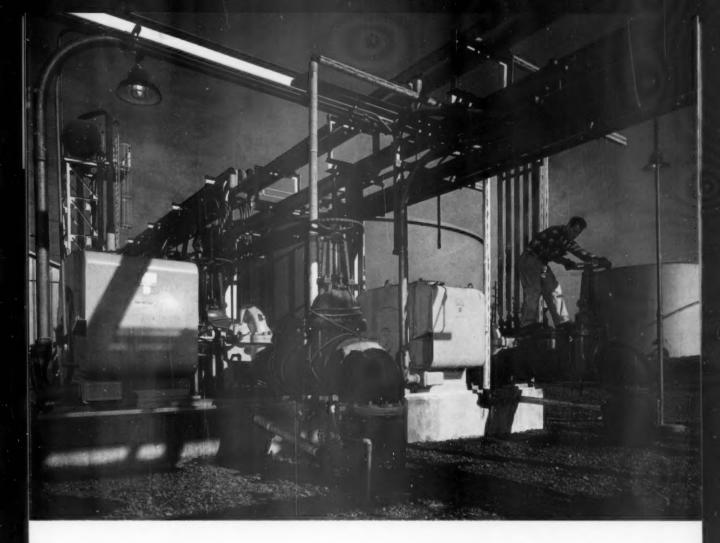
PARKER-KALON, a division of General American Transportation Corporation, Clifton, New Jersey. Offices and warehouses in Chicago and Los Angeles.

For More Information Write No. 277 on Place Mark Card-Page 32

For More Information about ad on facing page Write No. 278 on Place Mark Card→pg. 32→

200

PURCHASING



CONTROL CORROSION

Severe weathering, critical chemical exposures even at elevated temperatures, and many other corrosion problems can be controlled by a Truscon system specifically engineered for the job. Maximum protection at the lowest cost per square foot per year is the prime consideration of every Truscon recommendation.

When you consult Truscon you get a written

specification for proper surface preparation and painting, plus assistance in application and inspection methods. Interior or exterior surfaces, metal or concrete, machinery, buildings, bridges, or tanks, can all be protected by a Truscon coating system. Call the branch nearest you or write Truscon Laboratories for

TRUSCON, RESIDENCE ON LABORATORIES OF RESIDENCE ON LABORATORIES





LINERS IN ROLLS



stop waste motion! • handier to use! lower overall costs!

NOW A CHOICE: CONTINUOUS ROLLS OR SINGLE FLAT LINERS... GER-PAK comes both ways! How do you package? In steel or fibre drums, cartons, cans, pails? Regardless of type, size or shape of container, there's a competitively-priced GER-PAK liner to fit your needs.

Inert to acids, alkalies and caustics, GER-PAK seals out moisture and contamination...your products keep that "just-packed" clean look. All liners available in standard flat packing or in new "Hand-E-Roll" continuous rolls with perforated separators for quick detachment. Choice, too, of gusseted and non-gusseted as well as tie-off and peel over construction.

LEAKPROOF DOUBLE SEAL available upon request

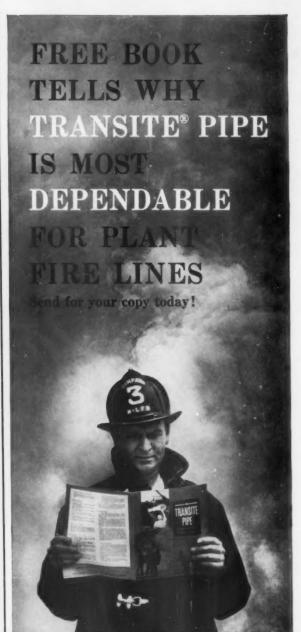
Tell us of your specific needs, or write on your company letterhead for descriptive literature and sample GER-PAK liner. Address Dept. PM-10.

the short way to say superior polyethylene film



GERING PLASTICS
division of STUDEBAKER-PACKARD CORP.
Kenilwarth, N.J.

For More Information Write No. 279 on Place Mark Card-Page 32



JM JOHNS-MANVILLE

Box 14, PU-10, New York 16, N. Y.

Please send me, without obligation, your facts and data book on Transite Pipe for Plant Fire Lines.

NAME	 	 	
ADDRESS			

CITY	ZONE

COUNTY	STATE
COUNTY	SIAIE

For More Information Write No. 280 on Place Mark Card—Page 32
For More Information about ad on facing page
Write No. 281 on Place Mark Card—pg. 32→

PURCHASING

Modern, efficient material handling equipment for aluminum sheet at our Ferre Haute, Indiana, plant. For more information about our products and facilities, write for booklet. "Academia Aluminum Mill Products."

ANACONDA: a respected name, and now a vigorous force in aluminum

When buying aluminum for your product

PIG . INGOT . SHEET . PLATE . TUBE . PIPE . ROD . BAR . EXTRUSIONS . PLAIN AND LAMINATED FOIL

check with ...



ANACONDA ALLMANIM COMPANY . GENERAL OFFICES LOUISVILLE T. KENTUCKY

Office Equipment and Supplies

Better Results With Offset

TOO OFTEN purchasing agents fail to consider offset equipment as much more than duplicators. With such a limited regard, there will be a limited use for offset.

However, offset offers many advantages, including variety, interest, eye-appeal, and flexibility. The offset process can easily be put to work profitably in purchasing departments.

For variety, it is simple to reproduce typewritten copy, which is typed on the same typewriter, in different sizes. Copy is typed separately and then enlarged or reduced to the size desired with a gloss photostat.

In making a reduction, it is important that the letters are clean and sharp. Dirty, filled-in letters will give a plugged-up effect. If typing is done through a regular ribbon, the strokes should be even to assure uniform reproduction. Erasures should be clean, otherwise the smudges may reproduce.

Nothing adds more interest to an offset reproduced job than including artwork and photos at little or no extra cost.

If prepared in the same size that it is to be printed, a photograph or artwork need only be pasted in position. An original is not always necessary—pictures from magazines and catalogs will often give satisfactory reproduc-

Frequently, however, it is necessary to enlarge or reduce. When this is so, try the following simple method:

(a) Place the illustration on a larger sheet of blank paper and draw a line on each side to form a rectangle.

(b) Remove the illustration and run a line from the lower left hand corner to the upper right hand corner-and all the way out to the edge of the sheet.

(c) Using this diagonal line as a base, any two right angle lines drawn to meet this diagonal will give an area which is in proportion to the original.

When an unusually great reduction is made, make certain that any lettering or lines in the artwork are sufficiently heavy. Otherwise they will not be legible.

P.A.'s who use offset equipment can take good advantage of a clipbook offered by Mead Papers, Inc., 118 West First Street, Dayton 2, Ohio. It provides a variety of ready-to-affix artwork for almost any purpose.

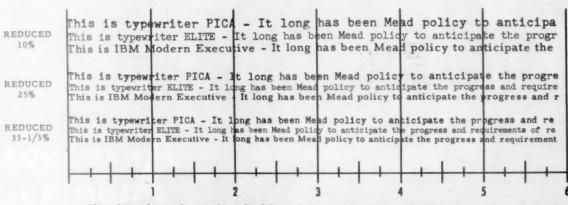
The quality of photographs used for offset reproduction is important. Photos that are too dark tend to darken; photos that are too light tend to "wash out" in appearance. Where several pictures appear on the same page, it is important that the over-all tone value of each be as nearly alike as possible.

Users of office-size offset equipment sometimes forget that there is any other color of printing ink than black. Consider using colored inks. They can provide excitement and impact on even singlecolor jobs. To add even more change and variety, run a color or a few colors on a variety of colored paper stocks.

The selection of paper stocks with an eye for the unusual adds an even greater opportunity for assortment and variety. If bulletins have been printed on bond paper for a long time, switching to a special finish offset will give a textured feel.

Offset has the advantage of being easy to print on many papers. Use of precut papers assures the correct maximum sheet size and exact uniformity .

Purchasing agents may at first be cautious about experimenting with offset jobs. But once the initial step is taken, it is surprising how good the job can be.



three basic typewriter faces after reductions of

This chart shows the resulting legibility of the 10%, 25%, and 33%%. It also shows the number of characters to the lineal inch in each reduction.

At last-a ballpoint especially designed for office use!



Lightning

BALLPOINT PEN

ONLY THE EVERSHARP

- Comfort grip for easier, effortless writing—prevents writing tension
- Porous ball point for speedier, neater work — designed to write "non-skid"
- Longer ink supply to cut refill expenses nearly six inches of new high-density ink
- "Pocket Proof" design available without clip to discourage pilferage

FREE SAMPLES!

WRITE ON YOUR LETTERHEAD TO:

DEPT. B
JANESVILLE, WISCONSIN

CHECK STYLE DESIRED:

- Non-refiliable, no clip-394 retail
- Refiliable, no clip-454 retail
- Refiliable, with clip-494 retail
- All three

For the best writing ever ... it's EVERSHARP!



TWA Intercontinental Boeing 707 Jet A Completely New Concept of Erasing Time Savings, Speed, Perfection

SUPER CONVENIENT JET ERASERS

SHAPE: Almost like a ball point pen. Wonderful in "feel" and balance, so easy to handle and

STYLE: Smart, transparent polyethylene holders with pocket clip or with whisk brush for

SIZE: Luxury-rubber cores, over 41/2" long!

SPEED: The smoothest, cleanest, fastest erasing ever originated to gratify your office workers, to "perfect" correcting and to minimize erasing time.

EXCEPTIONAL QUALITY-RUBBER TEXTURES FOR ALL ERASING REQUIREMENTS

REQUIREMENTS
MULTI-PURPOSE ERASER >
NO. 855 TWIN JET. Brand Ness!
Double ended, Contains both gray
and red rubber cores, each over 2"
long! Gray rubber for erasing type
writing, business machine writing,
ink; red rubber for pencil erasing
and cleaning.

FOR PENCIL ERASING &

NO. 825 JET. With fine red rubber core. (No. 8250 with whisk) FOR ERASING INK, TYPEWRITING, BUSINESS MACHINE WRITING NO. 827 JET. With business-like gray rubber core. (No. 8270 with whisk) NO. 825 JET. With fine red rubber

FOR BALL POINT ERASING
NO. 838 BALL POINT JET.
Special "ball point" formula green
rubber. (No. 8380 with whisk)

rubber. (No. 8380 with whisk)
Money-saving refills in each texture
The NO. 800 JET TRIO
EXECUTIVE DESK SET
Unusual and attractive Jet Eraser
Set. Contains one each Nos. 825,
827 and 838 Jet Erasers, with refill
for each. In attractive, convenient
size, transparent polyethylene case.

Ask your stationer today for Weldon Roberts quality Jet Erasers or write us for descriptive literature. An excellent gift!

WELDON ROBERTS RUBBER CO. 365 Sixth Avenue Newark 7, N. J. World's Foremost Eraser Specialists



Finest Quality for the Finest Erasing

Correct Mistakes in Any Language

For More Information Write No. 283 on Place Mark Card-Page 32

Office Equipment

Electronically-glued multi-copy system for data processing machines and typewriters has been introduced by The Hamilton Autographic Register Company, Hamilton, Ohio. The new forms are designed to avoid tenting and



have perforated interleaved carbons to facilitate removal. Sheets differing in size can be used in the same set, depending on the user's needs.

Write No. 72 on Place Mark Card-Page 32



Wall and floor water coolers which mount flush to the wall have been introduced by Commercial Equipment Department of General Electric Co., 14th & Arnold Streets, Chicago Heights, Illinois. The new shape of the units permit drinking from either side, as well as the front. The wall units may be mounted at any height, even on the floor. A special carafe-filler accessory is available for use on the executive

Write No. 73 on Place Mark Card-Page 32





Ask your H-O-N dealer to show you the improved construction features and desirable utility features that distinguish both H-O-N styles as solid values for your desk investment. Write H-O-N Co., Muscatine, Iowa for literature, and dealer's name in your city.

For More Information Write No. 284 on Place Mark Card-Page 32

CONTROL AT CELANESE

"Moore forms help us

save \$16,000 a year

in billing costs"



WALTER L. McINTOSH, Controller, Celanese Chemical Company, a division of Celanese Corporation of America

Celanese Chemical Company's new automated orderinvoice system has brought many advantages, both to the company's management and to its operating departments. These include better control of production and shipping, and centralized billing, with faster, more accurate paperwork in nine locations. The system makes possible a 25% increase in billing without extra operating costs.

The system's basic feature is automatic printing of information on specially-designed forms. Orders are processed like this: first, a customer acknowledgement is prepared on a nine-part form. This is done on an



automatic typewriter that produces a punched byproduct tape, containing the order data. As copies of the acknowledgement are distributed, the tape is used to send the order by teletype to the specified shipping point for filling. At the same time, it is picked up on duplicate tape at Central Billing, where it is held until a shipping report comes in. Then the duplicate order tape is used on automatic billing machines to print the invoice on another nine-part form.

A second by-product tape is made at this time, and converted to punched cards. Data for accounts receivable, weekly sales analyses and other control functions are derived from these cards. All through the system, manual operations have been cut, reducing the chance of error to a minimum. Time is saved at every step, and the multi-part forms provide accurate copies for every office need. The forms are Moore Speediflo—the company's control in print.

"When it came to handling paperwork, the Moore man's advice was priceless," said Walter L. McIntosh, Controller of Celanese Chemical Company. To find out how the Moore man's knowledge of systems can help you get the control your business needs, write the nearest Moore office.

Moore Business Forms, Inc., Niagara Falls, N. Y.; Denton, Texas; Emeryville, Calif. Over 300 offices and factories throughout the U. S., Canada, Mexico, Cuba, Caribbean and Central America.

Build control with

MOORE BUSINESS FORMS



Exciting new Kodak "double feature" now at your local Verifax dealer

Stop by today . . . or phone for free demonstration in your office. Both of these new Verifax Copiers boast exciting advances that let you make dry, easy-to-read copies of office items even faster and more easily than before. And the "decorator" colors are a welcome added touch. Price of the Bantam, Model B is \$132.50; the Signet, Model B is \$175.00.

> See "Yellow Pages" (under duplicating or photocopying equipment) for name of local Verifax dealer. Or write Eastman Kodak Company, Business Photo Methods Division, Rochester 4, N. Y. for free booklet describing all Verifax Copier models.



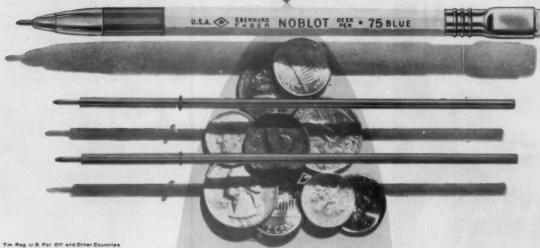
Jerifax Copying DOES MORE... COSTS LESS... MISSES NOTHING

odak

GUARANTEED BY EBERHARD FABER

money in the bank!





SAVE!

USE NEW NOBLOT REFILL DESK BALL PENS AGAIN AND AGAIN!

The more you use, the more you save—thanks to EBERHARD FABER'S new replaceable ink cartridge! Only new NOBLOT REFILL by EBERHARD FABER gives you all this: Bright, durable metal tip that unscrews easily to replace ink cartridge • Choice of four ink colors: Blue, Red, Green, Black • Handsome molded plastic barrel • Regular or Thinrite ball point • Replaceable flat ball pen eraser. NOBLOT REFILL—gives you lots more on the ball!

Contact your nearest stationery supplier for new NOBLOT REFILL DESK ball pens by EBERHARD FABER—your one source of supply for all writing needs.

@1960 EBERHARD FABER, Inc.



SINCE 1849

EBERHARD FABER

puts its Quality in writing

Wilkes-Barre, Pennsylvania-New York-Toronto, Canada

Regular 39¢
Extra Cartridge 15¢

Thinrite 49¢
Extra Cartridge 25¢
... less in quantities.

Eberhard Faber Pen & Pencil Co., Inc. Crestwood, Wilkes-Barre, Pa. Send me Free Sample of new Regulor NOBLOT REFILL PEN Check Color Choice (Blue) (Red) (Green) (Black) Title_ Company Address _Zone_ State Attach to company letterhead

For More Information Write No. 287 on Place Mark Card-Page 32



here's how *VISI* record

split-second record location

...at ARMA Division American Bosch Arma Corp.

lets one clerk control 20,000 items...

With the VISIrecord system, one clerk can tell in seconds where and by whom one of 20,000 laboratory and test instruments is being used and when the item is due back for re-certification. Scanning all 20,000 records takes only about an hour.

...at TEXAS INSTRUMENTS, INC. Apparatus Division

saved 3500 man hours per year following up purchase orders The VISIrecord system helped

lighten the routine load on buyers, reduced the possibility of overlooking delivery dates, virtually eliminated the possibility of a delivery entering the plant without being inspected and recorded.

...at STROMBERG-CARLSON Division of General Dynamics

saved the equivalent of four personnel department employees' time

And, all personnel facts, figures and statistics on more than 8,000 employees in plants and offices across the country are available instantly.

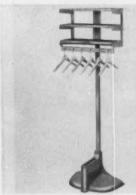
The world's fastest visible record keeping system

...can help you

VISIrecord Systems Specialists have the know-how to analyze your record-keeping set-up. Their experience and the facilities available to them will enable them to provide you with a time and money-saving system. Write to Dept. P-4 for case histories on above and any other applications.



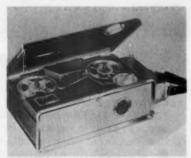
Office Equipment



Modern line of garment racks accommodating 6 to 15 hangers has been introduced by Borroughs Manufacturing Company, 3002 N. Burdick St., Kalamazoo, Mich. All models have vinyl-covered hanger bar which can be reversed to increase hanger capacities 25%. The new line includes a choice of five colors in baked-on enamel.

Write No. 74 on Place Mark Card—Page 32

Low-cost transistorized portable tape recorder and a professional grade stereo model were unveiled by Telectrosonic Corp., 35-18 37th Street, Long Island City, New York. The recorder will operate interchangeably on regular house current, on 12-volt automobile systems, or on its own batteries.

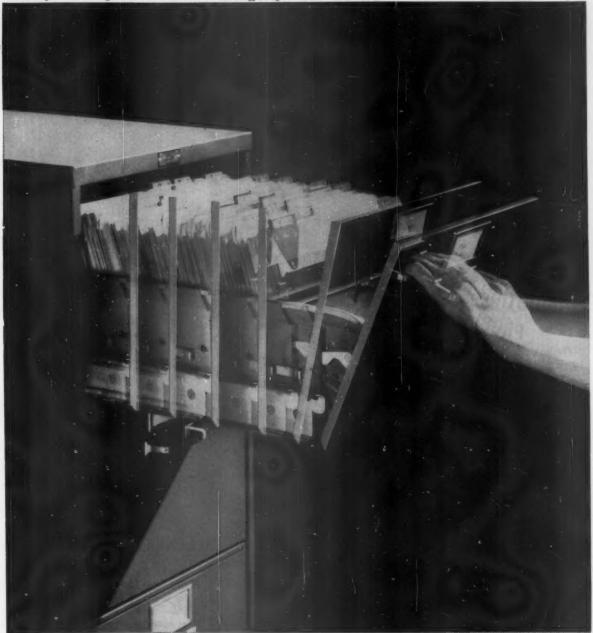


Write No. 75 on Place Mark Card-Page 32

Actual samples of 35 materials run on table-top duplicator are available from A. B. Dick Company, 5700 West Touhy Ave., Chicago, Ill. They illustrate the duplicator's use for office forms letterheads, newsletters and other materials.

Write No. 76 on Place Mark Card—Page 32

■ One of the many extras that make GF office furniture so much better



99,893...99,894...99,895...

YOU'VE PROBABLY NEVER WONDERED how many times a file drawer is opened and closed in the course of its business life. We have. We estimate, for example, that during 25 years' service, a typical file drawer must survive approximately 100,000 "openings and closings". That's why we put the patented GF file drawer suspension through a rugged life-test.

TEST DRAWERS ARE OPENED AND CLOSED 100,000 TIMES mechanically — carrying 85 pounds of weight. They must function as smoothly and quietly the 100,000th time as the first, or they don't pass! It's just one of the many extras that make GF business furniture serve better, last longer. The General Fireproofing Co., Dept. Y-19, Youngstown 1, Ohio.

Visit us at the OEMI BUSINESS EQUIPMENT EXPOSITION Los Angeles Sports Arena • November 1-4





PRODUCTION MARKING PROBLEMS?

The solution is at your fingertips from Blaisdell—leading manufacturer of specialized industrially graded markers and writing instruments.

A SPECIFIC PROBLEM ...
OR A COMPREHENSIVE SURVEY ...

both are as close as your local Blaisdell factory-trained representative.

Over 600 surface engineered markers plus hundreds of job rated writing, reproducing, electronic tabulating and erasing instruments to meet the exacting specifications of your factory and office systems.

A PRODUCT FOR EVERY PURPOSE—FOR EVERY MARKING AND WRITING SURFACE Available at better stationers everywhere.

Contact us NOW for the name of your local Blaisdell representative.

Representatives in these leading cities.

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NEW YORK ATLANTA LOS ANGELES CLEVELAND PHILADELPHIA

Also Toronto, Mexico City and Havana



Marking Specialists to Industry and Office
For More Information Write No. 290
on Place Mark Card—Page 32

Office Equipment

The 1961 edition of the calendar catalog from Defiance Calendar Co., Inc., 1451 Broadway, New York 36, N. Y. is now ready. It illustrates the complete line of desk and wall calendars in a wide variety of styles and price ranges.

Write No. 77 on Place Mark Card-Page 32



Adjustable, modern book ends keep books, magazines and folders straight. Designed of slender anodized aluminum, they are spring loaded for tension, with non-marking white rubber tips. They adjust to any shelf height from 9½" to 14". The Hahn Co., 2311 Fox Hills Drive, Los Angeles 64, Calif. is the manufacturer.

Write No. 78 on Place Mark Card-Page 32

A device has been placed on the market which enables one to write a check with the pen end and "tamper-proof" it with a roller on the other end. This is



done by placing a light weight plastic base plate under the check and rolling the surface of the check to be protected. The base plate is carried in the checkbook itself; the entire unit weighs about one ounce. It is a product of Hamilton-Pax, Inc., 3745 North Kedzie Ave., Chicago 18, Ill.

Write No. 79 on Place Mark Card-Page 32

New office machine table, designed to provide space for the average office machine and allow room for necessary books, cards or papers, was recently introduced by Lyon Metal Products,



Inc., 8 Plant Avenue, Aurora, Illinois. The new table is 36" wide, 21" deep and 26" high. It is finished in gray enamel with a linoleum top, trimmed with beveled stainless steel.

Write No. 80 on Place Mark Card-Page 32

All-transistorized model intercom has been designed to overcome high noise levels and to ful-



fill office and industrial needs. The new unit is a product of Talk-A-Phone Co., 5013 N. Kedzie Ave., Chicago, Ill. Each station receives its pre-determined amount of volume with no division of output as more stations are called at the same time. Return speech from called stations is received at normal room volume.

Write No. 81 on Place Mark Card-Page 32

New catalog with 26 pages of stock business forms, systems, and related equipment is available from Carteret Printing Comparty, Inc., 480 Canal Street, New York 13, N. Y. It has illustrations, full descriptions, samples and prices.

Write No. 82 on Place Mark Card-Page 32



VERTI-FILE

See how a VERTI-FILE installation can save you up to 58% in floor space? You start saving the moment you install one.

CUT FILING COSTS IN HALF WITH VERTI-FILE

You can actually save up to 50% in equipment costs when you convert from conventional drawer filing to the vertical shelf concept perfected by Royal's DeLuxe VERTI-FILE* system. This is because VERTI-FILE cabinets cost no more but hold twice as much. Savings in floor space, too, run as high as 58% because VERTI-FILE substantially reduces required aisle width by eliminating space-consuming drawers. This advanced idea in record-keeping makes filing up to 35% faster, easier, more accurate. DeLuxe VERTI-FILEs by Royal bring you all the advantages of open-shelf filing, including maximum visibility, ease of access and entry, fully adjustable shelving, and "security-lock" doors if desired. DeLuxe's exclusive "Equalizer" feature insures easy opening of VERTI-FILE doors wherever pressure is applied. Steel construction and baked enamel finish give

VERTI-FILE units the quality appearance of fine office furniture. And there is no need to buy new folders or change your existing system. Write today for complete information to DeLuxe Metal Products Division, Royal Metal Manufacturing Company, Dept. 73-J. One Park Avenue, New York 16, New York.

Royal DELUXÉ DIVISION

*T.M. REG. U.S. PAT. OFF.

Association News

N.A.P.A. Officer Offers Tips to New York Buyers

THE METROPOLITAN Purchasers Club in New York City recently played host to the executive secretary-treasurer of the National Association of Purchasing Agents, Howard Ahl.

Mr. Ahl spoke to the group about "The Buyers Place in the Corporate Structure." He said the capacity of those responsible for purchasing must be broad enough to expand. It is impossible to work within the confines of a small area and hope to achieve greater successes.

"Today," Mr. Ahl told his

audience, "top level needs run heavily to abstract thinking, such as relations with other departments, relations with vendors, and the like."

A former director of purchases for the Philip Morris Co., and past president of N.A.P.A., Mr. Ahl urged buyers to obtain a greater knowledge of functions which are outside the purchasing department. "The man who understands overall company operations is in a better position to get on the escalator to higher places in the company."



Walter Sobolta, International Nickel Co., board chairman of the Metropolitan Purchasers Club, introduced the guest speaker at a recent meeting, Howard Ahl, executive secretary-treasurer of N.A.P.A.



The ladies are assuming a larger role in meetings and activities of the club.



Frank Graham (third from right), L. O. Koven and Brothers, a founder of the Metropolitan Purchasers, is currently serving as president of the group.



Mr. Ahl told the club that purchasing people must make a realistic appraisal of themselves to determine places of strength or weakness.



JAMES DONAHUE, DIRECTOR OF PURCHASES, WRIGHT AFRONAUTICAL DIVISION OF CURTISS WRIGHT, WOOD-RIDGE, N. J. 18478.

"Yellow Pages is our first source of new suppliers!"

"With so much research and development going on here, we have a constant need for new supplies. That's why so many of our people keep the Yellow Pages right on their desks. We also keep a central file of some 50 different Yellow Pages directories — and it's in constant use!

"Our three out-of-area purchasing representatives depend on the Yellow Pages, too. Just the other day, we were looking for a ceramic coating material we couldn't get locally, and our representative in New England found it fast — in one of Massachusetts' Yellow Pages directories!"

Find the new supplies, the hard-to-locate items, the emergency services you need fast—by referring to the Yellow Pages first!

America's Buying Guide for over 60 years!

National Association is Solid in the South

UNDETERRED by the swirling currents of state and local politics around them, two outstanding chapters of N.A.P.A. held another of their joint meetings in Roanoke, Va. in mid-September.

The Old Dominion and Carolinas-Virginia Associations gathered in the Hotel Roanoke for a joint session shortly after a local election that was so close that only the welcoming mayor's title could be printed on the program. And one of the highlights of the session was a banquet speech by Virginia's eloquent governor, J. Lindsay Almond, Jr., who interrupted his stumping for John Kennedy long enough to address the purchasing agents. (Governor Almond's speech was non-political, however. It was devoted mainly to praise of Virginia's centralized purchasing system and G. Lloyd Nunnally, vice-president of the Old Dominion group,

chief purchasing officer of the Commonwealth.)

But purchasing, not politics, was the business of the joint meeting, and it was expertly discussed and analyzed. The meeting opened with a challenge from N.A.P.A. Executive Secretary-Treasurer Howard Ahl to win greater stature by participating as a member in the work of the national. "It is awe-inspiring to contemplate," he said, "what could be achieved if we all concentrated on and worked toward our professional objectives."

Finding the Answers

Ahl offered a short self-analytical quiz for those who wonder what their professional obligations are. Ask yourself these questions, he advised: Have you taken steps to raise professional standards? Is your professional conduct above reproach? Are you a mem-

ber of the association because you really believe it serves the cause of good purchasing? Do you attend and take part in association meetings? Do you try to stay informed on purchasing problems on a national scale?

"If you have tried to find the answers to these questions, you have taken a long step toward being worthy of membership in N.A.P.A.," Ahl declared.

Dr. Wayne McMillen, associate economist of Morgan Guaranty Trust Co. of New York, told the purchasing agents that better timing of capital expenditures and inventory purchases can help "tame the business cycle." He said serious inflation is not an immediate threat, but warned that many pressures making for higher prices are still present. He predicted a healthy rise in business about mid-1961.

B. Scott Listen's increasingly



Virginia's Director of Purchases G. Lloyd Nunnally (I.) enters the banquet hall with his boss, Gov. J. Lindsay Almond, Jr. Governor Almond praised the work of Nunnally and his department in the banquet address.



Charlie Johnson's spirit was much in evidence as newspaper men, television cameramen, photographers, and magazine writers publicized the meeting. Here a TV cameraman shoots Dr. W. L. McMillen during his speech.





Carolinas-Virginia President Furman Pinson asks a ques- Part of the large crowd attending the joint session. tion during the question and answer period

famous presentation on the virtues of standards—"The Seven-Sided Posthole"—was warmly received. Mr. Liston, standards administrator for Diamond Alkali Company, kept the audience laughing but sent them away with a greater appreciation of standards and standardization.

"Purchasing and supply is a science," Governor Almond declared at the banquet. "We are becoming aware of the value of the contribution good purchasing is making to this country. Following the example of you in industry, we in government must extract the very limit of value from the tax dollar by good purchasing." He detailed some of the savings and other accomplishments of Virginia's department

of supply and purchase. "I have a great P.A.," he declared, turning to the beaming Lloyd Nunnally on his right.

Evolving Materials Management

A special presentation on paper and packaging value analysis was presented by Dan H. Reno, Champion Paper & Fibre Co. and John Dodge, Celanese Corporation of America. Mr. Dodge revealed that the packaging committee responsible for the 21% saving on the project he described is seeking other solutions to packaging problems. "We know that value analysis is a never-ending process," he said.

How a materials management system was evolved and is now staffed and operated was described by Leo A. Wise, director of materials for ASR Products. An article based on Mr. Wise's discussion will appear in Purchasing Magazine shortly.

W. Bruce Pirnie, Jr., manager of production at Jones & Lamson Machine Co., spoke on "Purchasing for Production." He declared that the "fourth objective" of purchasing, in addition to price, quality, and delivery, should be the cost of investment. "This should be a common objective of both purchasing and manufacturing," he said, "but too often they both overlook it."

"In my ideal company," Pirnie said, "purchasing and production control would be integrated in one department, reporting to one manager."



Leo Wise, director of materials for ASR Products, describes how his materials management system was developed and how it operates.

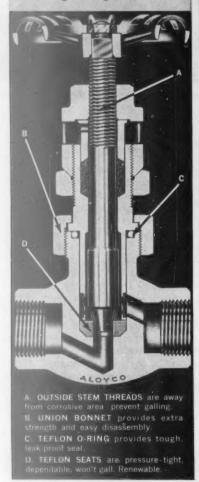


Youthful Mayor Willis Anderson of Roanoke (one week in office) makes the first of what should be many welcoming addresses.



Old Dominion V.P. Nunnally received the heartiest congratulations of fellow members in appreciation of his work for the association.

Stainless Steel* Aloyco Needle Valve eliminates leakage and galling!



*Alloys available: 18-8S, 18-8SMo, Aloyco 20

This #62 Stainless Steel needle valve has proved itself for 10 years in many types of severe corrosive service. It is particularly suitable for sensitive control of flow as in metering, or sampling for process plant, laboratory or pilot plant use. For more facts write: Alloy Steel Products Company, 1312 West Elizabeth Ave., Linden, New Jersey.



ALLOY STEEL PRODUCTS COMPANY

For More Information Write No. 293 on Place Mark Card—Page 32

Association News

P.A. Association Values Outlined In Long Island



Principal speaker at a recent meeting of the Long Island Purchasing Agents Group was Paul Farrell (seated, left), editor of Purchasing Magazine. Shown here with Mr. Farrell are: Carl R. Cooper (center), Consolidated Avionics Corp.; and Bob Heffernan, Arma Corp.; standing are (left to right): Ira Joss, Helena Rubenstein; Kurt Weidig, Arma Corp.; Dick Montag, Servo Corp.; and Bill Armswood, Helena Rubenstein.

The Long Island Purchasing Agents Group met at a regular monthly meeting recently to hear a talk on "Purchasing Ethics" by Paul Farrell, editor of Purchasing Magazine.

Outstanding speakers with national reputations is only one of the services offered to Long Island purchasing agents by this Group. Carl Cooper, Consolidated Avionics Corp., recently sent out a letter pointing up the advantages to membership in such an organization. The letter will serve to show purchasing agents in other parts of the country the multiple benefits to be had from joining a local association. It reads in part:

"The Long Island Purchasing Agents group offers a company, through their purchasing personnel, many opportunities to develop sound buying policies and practical buying procedures to achieve maximum profits.

"In order to give the newlyfound organization a firm foundation it was decided to become a section of the Purchasing Agents Association of New York. Our group takes advantage of every facility and service the New York Association has to offer.

"A member of the Long Island Group is entitled to the following:

a) Monthly meetings — Dinner meetings are held the second Tuesday and the speakers are outstanding men from diverse fields. Subjects vary from month to month but are always related directly to our function of purchasing. Members are also urged to attend the New York meetings held on the third Tuesday of the month.

b) New York Purchasing Review
—Members receive a copy of the
monthly magazine published by
the New York Association.

c) Educational Courses—They include courses on principles and techniques of purchasing; special interest, such as speech, contracts, and legal aspects of purchasing; seminars for new members; and

(Please turn to page 222)

For More Information about ad on facing page

Write No. 294 on Place Mark Card—page 32—

PURCHASING



the higher you aim
for new productivity
the more you need
Scovill's 'count down'
on quality



copper aluminum

IN USA ... and made botter to bring out the BEST in your products

SCOVILL MANUFACTURING COMPANY
Mill Products Division, 99 Mill St., Waterbury 20, Conn., Phone Plaza 4-1171



gives you fault-free metals of for **high speed** fabrication

Advanced mill processes — Scovill pioneered the CONTINUOUS CASTING of Brass alloys to bring fabricators of Brass Mill Products the new standard of metal soundness and uniformity made possible by this unique process. Other more recent new mill installations at Scovill include precision-controlled Aluminum rolling mills; the advanced Sendzimir Mill for extra-close-tolerance sheet and strip; the World's largest vertical tube extrusion press, with automatic induction billet-heating equipment, as well as one of the Industry's newest and largest specialized tube mills.

Advanced quality-control procedures—insure dependable UNIFORMITY in all Scovill Mill Products specifications . . . order to order and lot to lot. They promise more accurately dimensioned, finer quality mill products essential to efficient high speed fabrication. Quality-control is a full-time job at Scovill, and the results are evident to fabricators in their own higher production speeds, minimum tool and machine adjustments and superior quality of finished products.

Advanced inspection equipment and methods— There are many inspection stations along each of the Scovill production lines for Brass strip and sheet, rod, wire and tube. In addition, samples of alloy billets and bars, as well as of finished mill products, undergo detailed inspection and test procedures in Scovill's Metals Research laboratories. Brass Mill Products that pass these rigid inspections and tests are considered by many to be the finest in the World.

Advanced packaging — Unique Scovill packaging methods protect quality, finish and condition, make it easier for fabricators to warehouse, handle and use Mill Products. Time- and cost-saving innovations such as extra-long-length coils of strip, self-feeding wire "dispenser" drums, special long lengths when required in tube mill products, are available to fabricators who need them.

Make Scovill a part of your competitive team, let us contribute our wealth of experience and ultramodern equipment to the success of your NEW products and production plans.

SCOVILL MANUFACTURING COMPANY

Mill Products Division, 99 Mill Street, Waterbury 20, Conn. Phone PLaza 4-1171







"With the quality control at Phillie Gear, how can we miss?"

WHEN YOU INSTALL QUALITY... there is no question about performance

Modern methods of gear checking and quality control are just as important as precise manufacturing facilities. Our ability to make exact measurements of tooth profile, helix angle and tooth spacing allows us to furnish commercial and ultra-precision gearing of an accuracy and quality that can't be matched.

In our new plant you will find quality control procedures and equipment that are second to none. It is your assurance of consistent quality to meet your specific needs.



Soundness of materials is explored with this Ultrasonic instrument capable of penetrating up to 30 feet of steel.



On this machine, gears up to 42 inches in diameter are checked for profile, lead, and surface finish.

For complete data, write for Catalog G-127,

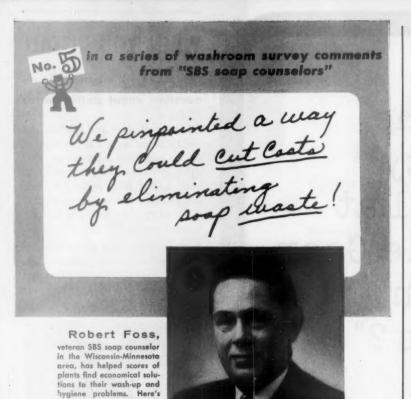
philadelphia

King of Prussia, (Suburban Phila.) Pennsylvania



For Mare Information Write No. 295 on Place Mark Card-Page 32

ОСТОВЕК 10, 1960



"We found this plant's washroom costs way up! The powdered and liquid soaps provided in the washrooms were being wasted by the handfuls. Result: unsightly washbasins, slippery floors, excessive soap and housekeeping costs. In addition, these soaps proved only partially effective against the more irritating, difficult-to-remove soils in the plant.

We showed them how much more effectively and economically SBS 60 can do the job. Formulated especially for industrial use, this quick-acting cream deodorant soap is virtually impossible to waste . . . is equally safe on face, hands or body . . . and removes all the general soils found in this plant."



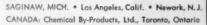
Money-saving suggestions like this begin with OPERATION PINPOINT—a thought-provoking presentation filled with facts about skin hygiene and washroom maintenance. The SBS soap counselor serving your area can pinpoint the right soap to do every skin cleansing job best and at lowest cost in your plant. Let him show you OPERATION PINPOINT . . . just call your nearest SBS office, collect.

the washword of industry

his report on a metalwork-

ing plant employing better than 3800 workers:







For More Information Write No. 296 on Place Mark Card-Page 32

Association News

(Continued from page 218

advanced seminars on purchasing management.

d) Committee participation— There are 16 different committees to which a member can devote special attention, such as standardization, auditing, educational, and the like.

e) National Association Weekly Bulletin—A digest which provides the purchasing man with easy to read, up-to-the-minute information on business conditions, commodities and purchasing problems.

f) Annual convention—The National Association of Purchasing Agents holds an annual convention for members from the United States and Canada. The next one is to be held in Chicago on June 4-7, 1961.

g) Surplus material—Member companies are eligible to list their surplus material in the Group Bulletin.

h) N.A.P.A. booklets—Available at no charge to members are booklets covering subjects, such as standardization, selection of competent buyers, and improving purchasing department reports.

i) Technical service—A technical service has been setup in Long Island for members use. If a specific technical or vendor location problem arises, the member contacts the service committee and receives prompt action.

j) Business and social contacts— The value of contacts made at these meetings can be vitally important to the member companies. As a result of one recent meeting a company realized a savings of over \$15,000 a year on material through pre-dinner discussions.

"As a lone wolf we may go far and fast; there is no satisfactory substitute for individual initiative, intelligence, education, and experience. However, business executives and professional men have learned to profit from the combined knowledge and experience of those who have similar problems and aspirations.

"Membership is a privilege and an investment in an organization owned and operated by and for purchasing personnel."

For More Information about ad on facing page Write No. 297 on Place Mark Card—page 32→

PURCHASING

Which of these 3 products and services can yo

New Cold Caustic Bleach Process

Looking for a way to use greater amounts of low-cost, more plentiful pulp-without capital investment for bleach equipment? Then let a Becco Sales Engineer show you our new technique* which allows you to bleach in the same equipment regularly used for the manufacture of cold caustic

In this new process, peroxide bleach liquor is added at the Bauer Refiner, and bleaching occurs during the refining operation. Bleach response depends on refiner densities.

Up to 20 points brightness increase has been obtained in commercial operations to date, and with no additional steam costs, no holding time, and no excessive chemical costs.

Becco can assist you immediately in setting up a production run and evaluating results. First step: use the coupon to let us know you're interested.

*-Patent Pending



"Enclosing \$100 — Send Patent License

Well, perhaps there's a little more to your gaining use of Becco patents than just mailing your dollar in, but not much more. And certainly, no more money. The \$1.00 really does cover it.

Becco has lots of patents, granted as a result of innovations in the use of Hydrogen Peroxide and other Peroxygen chemicals developed in Becco's Research Laboratories. But they don't do us a whole lot of good locked tightly in our safe. So, we long ago adopted the following policy:

If one of our patents can help you, we'll be glad to license the rights to you perpetually, for just one dollar. You get a nice certificate, incidentally, to cover the legalities, but more important -you also get free our complete engineering help in setting up your process, handling the material, maintenance, etc., etc.

What do we get? You as a customer - we hope - but there's no obligation on your part. Just seems to work out that way, though - when we know enough about a particular peroxygen to hold a patent on its use, chances are we've also learned enough to produce it purer than anyone else. You benefit from this; we do, too.

Use the coupon below to ask for a Sales Engineer - or our list of patents - that may help you solve an important problem.

Problems in handling Hydrogen Peroxide



Becco's Four-Fold Engineering Service Program - offered free -includes:

- 1. Comprehensive survey of your facilities.
- 2. Specific proposal with recommendation of proved equipment and where it is obtainable.
- 3. Installation supervision by Becco.
- 4. Periodic inspection and permanent service.

Can you use this free Becco help, based on more years of experience with bulk handling of H₂O₂ than any other manufacturer? Use the coupon to let us know.

BECCO fine





BECCO CHEMICAL DIVISION, FMC 161 East 42nd St., New York 17, N.Y.

Please have a Sales Engineer give me more information on Becco's Cold Caustic

NAME FIRM

ADDRESS.

ZONE STATE BECCO

BECCO CHEMICAL DIVISION, FMC

161 East 42nd St., New York 17, N.Y.

Dept. PM-F Gentlemen .

- Please send your list of patents available on the use of
 Hydrogen Peroxide
 Peroxygen Chemicals
- Peroxygen Chemicals Persulfate Chemicals Please have a Sales Engineer call.

NAME.

ADDRESS.

ZONE STATE **BECCO**



BECCO CHEMICAL DIVISION, FMC 161 East 42nd St., New York 17, N.Y.

Dent. PM-R

Gentlemen:

Please tell me more about your Four-Fold Engineering Service.

NAME

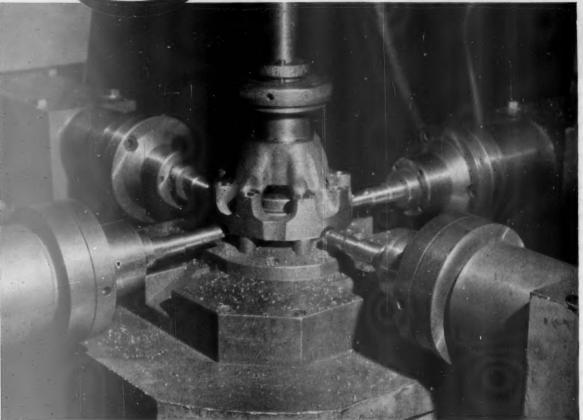
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ADDRESS

STATE



5) Tungsten-Free Carbide



4 times more production!

The job is rough and finish boring half holes in a C5 steel forging. The machine is a 4 way Cross Bore operating at a speed of 2360 rpm and 700 sfpm; with a feed of .005 and a .025 to .030 depth of cut.

VR-65 tips are brazed to boring tools by conventional methods.

On this interrupted cut, VR-65 produced from 80 to 100 pieces per grind as compared to 10 to 25 pieces by previous conventional tungsten-base carbides.

VR-65 is the first of a new generation of carbides to provide ultra high speed machining on all types of steel . . . see your V-R representative for details or write:



CREATING THE METALS THAT SHAPE THE FUTURE

WAUKEGAN, ILLINOIS

C-786

For More Information Write No. 298 on Place Mark Card—Page 32

PURCHASING

This Truarc retaining ring



Swingline



staple gun has cut

assembly time by 60%



and saved



per thousand units.

Result: the end cost of the assembled

product was substantially reduced.

PURCHASING PROPOSITION: Check the impact of your present fastening method

on the end cost of your company's product. Then, let a Truarc Engineer demonstrate from the widest line of retaining rings anywhere. He can show you exactly how much Truarc Rings will reduce that end cost. Read about the

impact of Truarc Rings on 70 different products (your own product may be there!) in our Catalog RR 10-58. For immediate action see your Authorized Truarc Distributor. He's as close as your Classified Telephone Directory. Look under: "Rings, Retaining."





Association News

Oregon P.A.'s Urged To Get in Politics

At a recent meeting of the Purchasing Agents Association of Oregon an outstanding industrial executive called members' attention to the general awakening among businessmen to the fact that business and politics do mix.

Paul Fillinger, manager of merchandising promotion, Electric Steel Foundry Co. in Portland, Oregon told the group, "It is a little too early to tell whether 'political action' will become two magic words like 'market research' or 'research and development,' but let me be most emphatic in this statement: If corporate political activity becomes a fad, the program is through at the start."

Business can be most effective, he said, in the role of informing the public of dangers, such as inflation, the importance of a balanced budget, labor relations, and the like.

The Oregon businessman counseled the purchasing agents not to let the other guy do it. This will not work, he declared. Each of us must take an active part in politics for improving government.

Mr. Fillinger outlined a check list and program for each man. "There are many ways to do this," he said, "The first and most important step is informing ourselves on local and national issues -and not just those issues which directly affect our job or our type of business.

Be Politically Informed

"Our democratic system can be great only when directed by an informed citizenry. How did you vote in this last election? Did you really study the candidates and the issues? Do you know why you are of the party under which you are registered? Do you know what it stands for?

"With a fundamental knowledge of government and the various issues, you can translate this passive interest into active participation. There are many precinct jobs,

part-time appointive or elective jobs that must be filled by informed and interested people.

"But many of these-and even major political offices-are won by default simply because few if any are willing to give of their time and talents."

Mr. Fillinger, who doesn't ask anyone to do what he isn't doing himself, related his own experiences with his employer when he decided to enter politics. Many points were discussed. Perhaps the most important was the assurance given to him that he was not accountable to anyone in the company and no reporting of his political activities was expected.

"When it comes down to cases," Mr. Fillinger concluded, "a lot depends on what the boss thinks. I believe that 99% of them, properly approached, would recognize the advantages of allowing their employees to participate actively in politics.

"Business and politics do mix and must mix; this philosophy is tht best assurance we have for an optimistic future."

NOW-the first polished aluminum towel dispenser

"It'll look this good months from now"





The new look is polished aluminum — a brand new Turn-Towl cabinet that takes water and wear without showing it. Intensive two-year tests prove

- · Anodized permanent aluminum finish can't rust, won't wear or chip
- · Cabinet is easy to clean, leaves no fingermarks Your nearest Mosinee Turn-Towl distributor has the new aluminum cabinet now. Write for his name.

WIISINEE Sulphate Towels BAY WEST PAPER CO. 1100 West Mason Stre GREEN BAY . WISCONSIN

Mosinee Turn-Towl cabinets are leased free for use with Mosinee towels

For More Information Write No. 300 on Place Mark Card-Page 32



Purchase for Profit!

Specify Chicago Molded

Unlike ordinary utensil handles, the handle for this new Toastmaster Fry Pan is molded in one piece. No cracks, crevices or screw holes for food to lodge in. Simple, speedy assembly, too. Both the handle and the removable automatic heat control are molded of Bakelite phenolic material designed for strength, maximum heat resistance and insulation. Its lustrous finish is readily washable and is unaffected by chemicals, acids and food stains. Here's another example of smart buying-which is to say, specify

CHICAGO MOLDED PRODUCTS CORPORATION

1020-H North Kolmar, Chicago 51, III.







POSITIVE DUPLICATION - EVERY TIME!







These highly accurate apothecary weights give exact results, time after time after time. You will get this same kind of Positive Duplication with these centertype grinding wheels, and with all CINCINNATI © GRINDING WHEELS.

HOW POSITIVE DUPLICATION IS ACHIEVED

The predictable performance of these wheels is the positive result of Cincinnati's unique manufacturing process. It involves 36 separate quality controls which produce grinding wheels of unsurpassed uniformity. For example, sensitive print-weigh scales put an unmistakable record on each mix card of the exact amounts of materials used. And the figures must correspond to the exact amounts called for.

UNIFORMITY HELPS YOU

When you use CINCINNATI ® WHEELS you can plan production schedules with the assurance that

each reorder wheel will act and grind exactly like the original. This is the promise—and performance—of Positive Duplication.

CALL CINCINNATI TODAY

Solve your grinding problems with the help of Cincinnati's factory-trained specialists. Their wide experience in job set-ups and grinding operations is at your service. Just call your CINCINNATI ® GRINDING WHEEL Distributor, or contact Cincinnati Milling Products Division, Cincinnati 9, Ohio.



*Trade Mark Reg. U. S. Pat. Off.

A PRODUCTION-PROVED PRODUCT OF THE CINCINNATI MILLING MACHINE CO.

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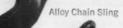
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OCTOBER 10, 1960

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Manila Cordago

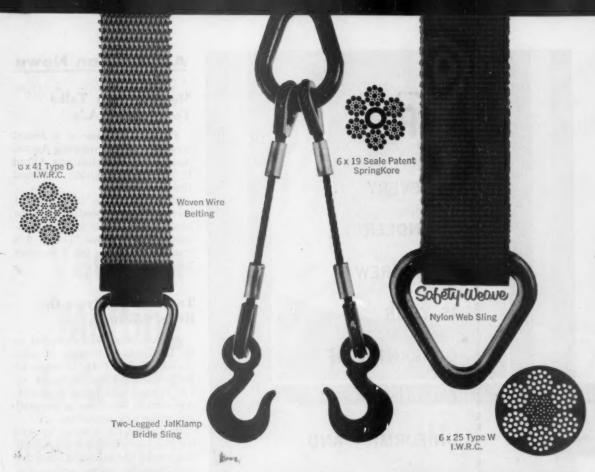




between the hook



8 x 19 Type K CenterFit



and the load...it's J&L

It's J&L all the way between the hook and load, because the complete J&L line covers every lifting need. The illustrations here are only a sample. J&L hand and power hoists are not shown. Nor are many other ropes, slings, fittings,

assemblies and accessories . . . stocked and sold by your J&L Distributor, for complete safety in lifting.

But, illustrated or not, you'll find in the Jones & Laughlin line everything you want for all your lifting jobs.

Your JaL distributor has the complete lifting time for complete safety

Your authorized J&L Wire Rope Distributor is fully equipped to help you. He can provide you with any item from the complete line and can give fast service, too—right down to securing while-you-wait fabrication and repair of alloy chain slings with JalLink (another exclusive J&L development).

In addition, if you are faced with an unusually tough lifting operation, he can arrange for skilled J&L engineers to help you. They'll advise on the best method—or even design a lifting mechanism specifically to meet your problem.

Hundreds of J&L Distributors give you all the advantages of local, personal service, *plus* the delivery back-up of 15 J&L Wire Rope Service Centers *plus* the applications help of J&L factory engineers.

When you select from the complete J&L line, you get more than what you need between the hook and the load. You also get service, safety and confidence in lifting—because it's Jones & Laughlin.

Call your J&L Wire Rope Service Center or Wire Rope Distributor—they're in the yellow pages.

FOR SAFETY IN LIFTING



Jones & Laughlin Steel Corporation
WIRE ROPE DIVISION

MUNCY, PENNSYLVANIA



 THE



ON EVERY

CHANDLER

CAP SCREW

IS YOUR

GUARANTEE OF

QUALITY

UNIFORMITY AND

PRECISION!



This trademark — CP — is your assurance of engineered quality from start to finish . . . your guarantee of functional dependability ... your security that every cap screw has successfully met rigorous performance tests. Chandler Products . . . manufacturers of standard and special fasteners for over 30 years . . . mass-produces cold-headed cap screws from high carbon, alloy, super-alloy and stainless steels. Check with Chandler before placing your next order.



chandle products

corporation 1489 Chardon Road . Cleveland 17, Ohio

ROOS-CHE

For More Information Write No. 303 on Place Mark Card-Page 32

Association News

Methods Man Talks To Dallas P.A.'s

Principal speaker at a recent meeting of the Purchasing Agents Association of Dallas was Alfred F. Edwards, Republic National Bank of Dallas.

Mr. Edwards is in charge of methods and procedures at the bank and his topic for the Association meeting was "The P. A.'s Part In Magnetic Ink Character Recognition.'

Top P.A. Analyzes the Brass Salesman

An invitation was extended to H. L. Consley, director of purchases of the York Division of Borg-Warner Corp. to speak to The Copper and Brass Research Association. Mr. Consley accepted and spoke with impunity.

He opened his remarks by saying that sales managers may think they train the salesman, but the real training comes across the corner of a purchasing agent's desk. The buyer-seller combination is the driving force that keeps industry moving.

From the standpoint of management, Mr. Consley said, the salesman is charged with the very important responsibility of moving the product so the company can continue operating and create a profit.

"The purchasing agent has a mandate from management just as important and vital to industry." He must get the material in so that the plant can run and make a profit. The only difference between the two jobs is in the direction of the flow.

Mr. Consley added, "We don't expect thanks from a salesman for giving him an order. We feel that each has done the other a favor in helping him carry out his important mandate from industry. I am being neither theoretical or idealistic when I say that we are partners in the equipment we build, and the most practical thing you can do is to work with us and help."

(Please turn to page 234)

Vacuum Melting **Extracts Impurities**



Improved soundness, better hot and cold workability, higher mechanical properties, cleaner metal with lower gas content-these are the characteristics of vacuum melted steels from Allegheny Ludlum.

Typical of the metals produced by vacuum melting are Consutrode® steels and alloys. They provide outstanding cleanliness and homogeneity at minimum cost. These alloys, pioneered by Allegheny Ludlum, are available in the largest ingot sizes of any vacuum melting process-up to 20,000 lb. ingots. This makes possible larger products of high quality in super alloys, stainless, tool, and low alloy steels.

Consutrode alloys are made by vacuum remelting electrodes of a predetermined composition by an electric arc. The white heat of the arc-8000 Fbreaks down many nonmetallics in the electrode. Considerable degasification, as well as substantial improvement in cleanliness, is achieved by the furnace vacuum which removes the oxides and nitrides released in melting of the electrode.

Controlled solidification of the molten metal in a water-cooled crucible is a principal advantage of the consumable electrode vacuum process. This gives an exceptionally sound and homogeneous ingot.

Other recently developed methods for improving steels and properties of the improved alloys are described in a new booklet, "Modern Melting at Allegheny Ludlum." It includes a description of Special Air Melted Steels, Invac alloys made by induction vacuum melting, Invacutrode alloys made by remelting Invac electrode stock by the consumable electrode vacuum process, and Consutrode alloys.

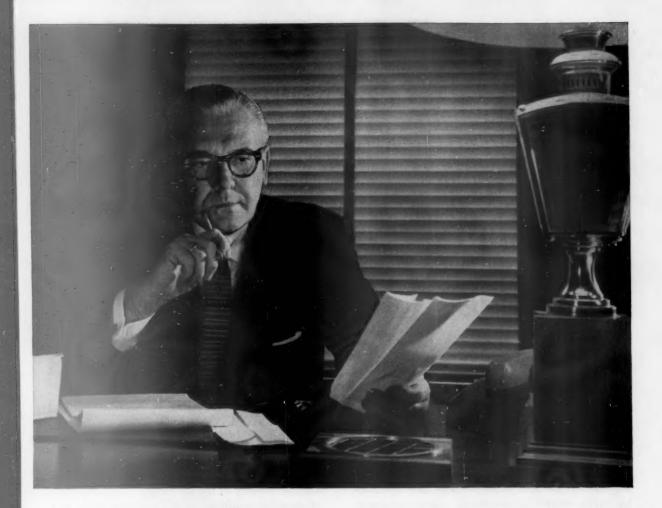
This new booklet is packed full of charts and graphs—a real help to anyone who must get the most out of metals. Ask your A-L representative for a copy or write: Allegheny Ludlum Steel Corporation, Oliver Building, Pittsburgh 22, Pennsylvania. Address Dept. P-10.

ALLEGHENY

PIONEERING on the Horizons of Steel



For More Information Write No. 304 on Place Mark Card-Page 32



The day the Manager looked at towels and saw dollars

Careful investigation of costs led this manager to an area that offered a good savings opportunity —paper products in the washrooms.

He found that his operation with restrooms serving hundreds of people daily, could save over 20% a year on paper costs by switching to Fort Howard Paper Towels and Tissue.

This saving was made possible because Fort Howard Towels and Tissue are available in a wide range of quality and in all well-accepted rolls and folds.

This means that you can cut costs by selecting the proper grade, fold or roll, pack, and price range to meet your needs exactly.

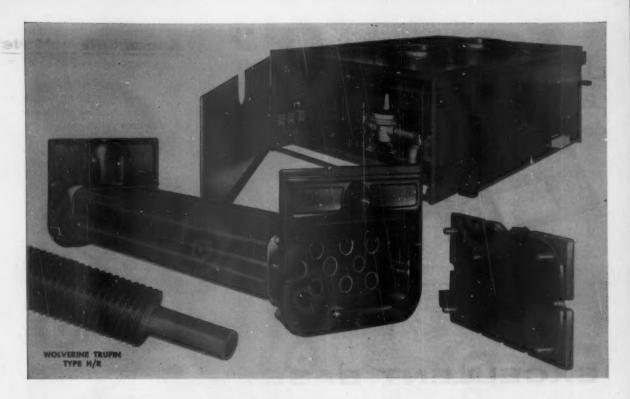
There is a Fort Howard representative nearby anxious to demonstrate to you how washroom expense can be cut, and high standards of service maintained.



Fort Howard Paper Company

Green Bay, Wisconsin
Sales Offices in New York, Chicago, Los Angeles
America's Most Complete Line of Paper Towels, Tissues and Napkins





IRRAS FIGINEERS, Inc. cut pool heater size 291% by tubing with Wolverine Trufin®

Like all manufacturers, designers of equipment for the swimming pool industry want maximum capacity from components of the smallest possible size.

That's why Laars Engineers, Inc., North Hollywood, California, used Wolverine Trufin Type H/R tube when they designed the world's largest capacity swimming pool heater.

Simply by using integrally finned Trufin Type H/R, Laars engineers were able to reduce unit size by a whopping 291%. The heater, with a rating of more than 170 boiler horsepower, has a 7,125,000 BTU input and an output of 5,700,000 BTU's. It is only 195 cubic feet in size. If tubed with bare tube, a unit of similar capacity and horsepower would require approximately 670 cubic feet.

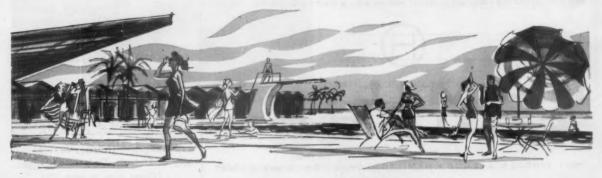
At Laars Engineers, Inc., however, Trufin's amazing abil-

ity to pack more heat transfer surface into less space has been well known for a long, long time. Tens of thousands of Trufin-tubed Laars water heaters and boilers are daily giving outstanding performance, both in the United States and throughout the world.

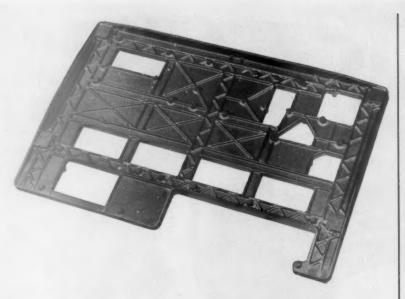
If your company is looking for ways to pack more heat transfer surface into less space, why not let Wolverine Trunn help you increase heat transfer performance. Write—TODAY—for complete information.



PLANTS IN DETROIT, MICHIGAN AND DECATUR, ALABAMA. SALES OFFICES IN PRINCIPAL CITIES.



For More Information Write No. 306 on Place Mark Card-Page 32



EXCELLENT BASE FOR PROFITS

This ninety-six pound casting was made for the National Cash Register Co. of Nodulite[®], Hamilton Foundry's ductile iron. The casting forms the base for the new Post-Tronic Accounting Machine. It measures 37½" by 23½" with sections varying from ¼" to 1½". Ductile iron was chosen for this part because of its ductility, dimensional stability, rigidity, and machinability.

Sharp pencil buyers know that the *ultimate* cost of a casting rather than the purchase price is most important to the cost of the end product. Dimensional accuracy, uniform machinability, fine surface finish, low rejects and delivery of orders on schedule result in castings at lowest ultimate cost and insure your reputation for product quality.

When new and unusual design problems arise in the selection of metal and the casting of parts, you will find that the skill and integrity of your foundry is your best insurance that specifications—and delivery schedules—will be met.

GRAY IRON . ALLOYED IRON . MEEHANITE . DUCTILE (NODULAR) IRON . NI-RESIST . DUCTILE NI-RESIST . NI-HARD



FOUNDRY.

1551 LINCOLN AVENUE . HAMILTON, OHIO . TWINDROOK 5-7491

For More Information Write No. 307 on Place Mark Card-Page 32

Association News

(Continued from page 230)

Director of Purchases Consley told the sales group that the salesman's greatest fault was to make a sale and then fail on the followup. In many cases we can't possibly wait for the long, slow routine of going through the salesman, a district office, and then on to the mill to find out about a shipment that is supposed to be made today. I am sure that it would be to your advantage, as well as ours, to place all of your customers in a position to call a scheduling man or a traffic man direct at the factory and get a five-minute answer."

Mr. Consley's parting words were, "There's nothing a purchasing agent likes to hear more than authoritative information on how a salesman's product will help do a better job—especially at less money."

N.A.E.B. Announces Plans For Regional Meetings

Bert Ahrens, executive secretary of the National Association of Educational Buyers, recently announced the dates and locations of various regional meetings which were planned and outlined by W. Christensen, N.A.E.B. vice president.

At the same time Bruce Partridge, president of the association reported the committee chairmen for the 1960-61 year. The chairmen and their committees are: Elmer Jagow, Knox College, convention committee; Harry W. Swink, Virginia Polytechnic Institute, surplus property; D. Francis Finn, Purdue University, committee on professional development; Harvey Sherer, University of Kentucky, bibliography committee; Norman Agnew, University of Alabama, business and purchasing manuals; and M. Gale Morgan, Illinois Institute of Technology, forms board.

The regional meetings will be held according to the following schedule:

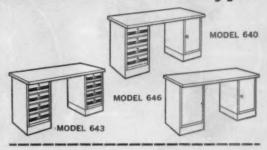
Michigan—October 13; University of Detroit, Detroit, Michigan.

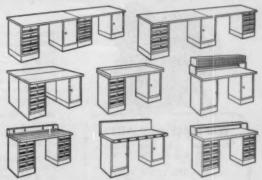
(Please turn to page 236)



HALLOWELL

UNIT WORK BENCHES more efficient—for every job





HALLOWELL Unit Work Benches, with interchangeable accessories, allow you to rearrange or add units for changing work requirements. Work flows smoother... your shop stays neater... when you equip with rugged, long-life Hallowell Benches. Widest selection of sizes and accessories in the industry. Order from your local distributor's stock. No long wait for delivery. Mail coupon for complete catalog.

Jenkintown 31, Po	3.	
Commence of the Commence of th	he Hallowell Full Line Catalo	og.
NAME	TITLE	
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COLUMBIA-HALLOWELL Division



JENKINTOWN 31, PA. . SANTA ANA, CALIFORNIA

where reliability replaces probability

Sier-Bath gives you MORE for every GEAR DOLLAR!







GEAR RANGE and SERVICES

Bevel Gears, Straight and Coniflex, 2" to 24" O.D., depending on ratio, 3 to 32 Pitch.

Miter Gears, 2" to 17" O.D., 3 to 32 P. Spur Gears, 2" to 48" O.D., 3 to 48 P. Helical Gears, 2" to 48" O.D., 3 to 48 P. Ground and Crown-Ground Helical and Spur Gears to 12" O.D., 4 to 48 P. Other Ground Tooth Spur Gears to 17"

O.D., 4 to 16 P. Worm Gears, 2" to 48" O.D., 3 to 32 P. Worms to 12" O.D. by 36" long. Ground Thread Worms to 6" O.D.

Herringbone Gears, to 36" O.D., 3

Instrument Gears, 1" dia. up. to 48 P. Internal Gears, 2" to 36" O.D., 4 to

Involute and Square Splines, ground and unground to 16" O.D. by 36"

Shafts, splined and pinioned to 60"

Internal Helical Broaching to 24" Diameter of Blank.

Precision Hobbing, Shaving, Grinding of all materials.

Sier-Bath

Gear Boxes custom designed and mfd.

More gear engineering services. Free consultation is provided by Sier-Bath gear engineers to study your gear applications — improve designs — survey gear requirements — give engineering assistance before and after installation, at your plant or in the field.

More efficient gear designs. Your gears are made to the ONE best gear design for your particular application.

More accurate gears. Sier-Bath gears are interchangeably accurate — frequently in the master gear accuracy range, if required. All measured tolerances rigidly checked on the most modern gear testing equipment ever assembled under

More economical gears. Sier-Bath's highly efficient gear designs and manufacturing methods bring you longer-lasting gears at no greater cost — often at less cost.

More advanced gear-making facilities. Sier-Bath's extensive, ultra-modern gear-making and testing equipment, and advanced gear technology, are unsurpassed anywhere.

More sales advantages for your machines. Sier-Bath gears can place your machines far ahead of competition by permitting heavier loads in smaller, lighter housings higher speeds — quieter operation — increased production — longer gear and machine life.

Your company can have these benefits by sending us gear drawings-or requesting a Sier-Bath gear engineer to call for discussion. Write on company letterhead for 36-page comprehensive Gear Manual.

Sier-Bath GEAR & PUMP CO., Inc.

9258 HUDSON BOWLEVARD HORTH SERGEN, H. J.

PRECISION GBARS

Also manufacturers of Rotary Pumps and Flexible Gear Couplings

For More Information Write No. 309 on Place Mark Card-Page 32

Association News

(Continued from page 234)

Group leader is Roy W. Reid, University of Detroit.

New York State-October 16-18: Rochester Institute of Technology, Rochester, N. Y. Willard G. Smith, Houghton College is group leader.

Iowa, Nebraska-October 17-18; Iowa State Teachers College, Cedar Falls, Iowa. G. Van Roekel, Central College is group leader.

Indiana-October 18; Indiana University Medical Center, Indianapolis, Indiana. Edgar Walz, Concordia Senior College is group leader.

Western Pennsylvania—October 21; Grove City College, Grove City, Penna. James D. Sands, Carnegie Institute of Technology is group leader.

Northwest-October 21-22; Sheraton, Hotel, Portland, Oregon. Group leader is Newton P. Scruggs, Multnomah School of the Bible.

Virginia, Maryland, Washington, D. C .- October 21-22; University of Virginia, Charlottesville, Va. A. Reid Elder, University of Virginia is group leader.

Central Pennsylvania—October 24; Wilson College, Chambersburg, Penna. F. Stanley Hoffman, Gettysburg College is group lead-

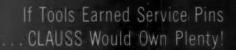
New England-October 24-26; Northfield Inn, Northfield, Mass. Group leader is Melvin D. Sargent, Wheaton, College.

California-October 27-28; Fresno, California. This is joint meeting of Northern and Southern California with both group leaders from the University of California, George R. Juarez, Berkeley; and Uel E. Murphy, Riverside Campus.

Metropolitan New York, New Jersey-October 30-November 1; Skytop Hotel, Poconos, Penna. Group leader is William C. Hanlon, N.Y.U. Bellevue Medical Center. This is a joint meeting with Philadelphia, H. Eugene Pierce, University of Delaware serving as group leader.

Texas, Oklahoma, Arkansas-November 6-8; Villa Capri Motor Hotel, Austin, Texas. Theos S. Morck, Texas Lutheran College (Please turn to page 240)

For More Information about ad on facing page Write No. 310 on Place Mark Card—page 32→



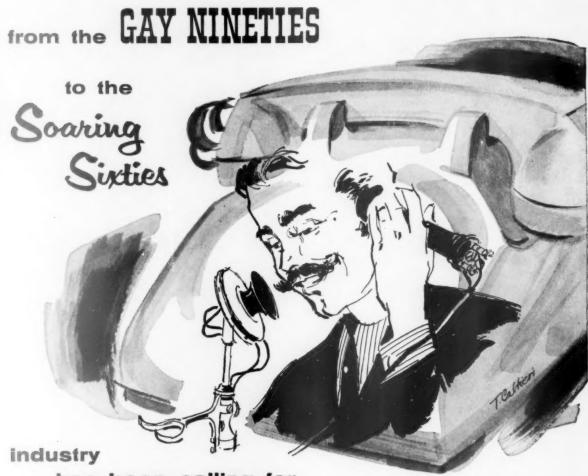
skilled hands cut more quickly and accurately. They stay sharp longer (minimize work interruptions while

stay sharp longer to minimize work interruptions while cutting edges are restored. You may pay more initially, but their length of service makes their cost per year on the job fidiculously low.

Satisfactory performance on the occasional usage of the home may be obtained with brittle "cast", soft center cold forged or more easily bent inlaid blade shears. Clauss scissors, shears and snips on the other hand, were created for production line conditions. The Clauss Cutting Tool styles shown here are rugged, hot hammer forgings with one piece handles and blades. Hot hammer forging is the modern day counterpart of the methods used to create the fabled swords of Toledo and Damascus. They are made for hard work write for an Illustrated Price List and for your nears.



The CLAUSS Cutlery Company



has been calling for **UDDEHOLM** quality spring steels

In the 1890's, when steel fabricators needed spring steels, in special sizes or finishes to meet production requirements exactly, they called for Uddeholm.



Today, you can call Uddeholm for the same prompt, exacting service. However, deliveries are even faster-from stock-and you now have over a thousand combinations of size, temper, analysis and finish from which to choose. Even hard-to-find tempered sizes, such as .016" x 121/2", in polished blue, can be delivered to you from any of Uddeholm's Spring Steel Service CentersNewington, Conn., New York City, Cleveland or Los Angeles. A full range of annealed SAE 1075, 1095, and other popular grades including stainless are also readily available. Stock sizes range from 161/4 to 1/8" wide, and from .125" to .001" thick. In addition, at each Service Center, Uddeholm maintains a staff of experienced technical representatives to help you select the right spring steel for your needs.

Modern edge finishing and slitting facilities-a more than 60-year-old reputation for accuracy in size, flatness and finish-guaranteed uniformity of hardness, analysis and fatigue life are your further assurance of satisfaction.

Write Today For Your Free Catalog-Stocklist!

UDDEHOLM COMPANY OF AMERICA, INC.

155 East 44th Street, New York 17, N. Y. . MUrray Hill 7-4575

BRANCH OFFICES AND WAREHOUSES Chicago, III. · Cleveland, Ohio · Detroit, Mich.

Los Angeles, Calif. · Newington, Conn. · Philadelphia, Pa. TOOL STEEL WAREHOUSE DISTRIBUTORS

ROLLED SPRING Rockford, III. - Rockford Industrial Steel Service Utica, N. Y. - Pacemaker Steel and Aluminum Co. IN CANADA . Uddeholm (Canada) Ltd. . Montreal . Toronto

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DISTINCTIVE

On the surface, it's sometimes difficult to distinguish between brands of gummed tape. The distinctive difference in Safetex (other than its superlative quality, of course) is the herringbone pattern on the glue surface. Distinctive, but functional, too. It helps spread moisture evenly for a better, faster seal. Generally, the only time you can observe this pattern is on a fresh roll of Safetex. It rarely pops off a package to reveal its secret. Next time you buy tape, demand the brand with the herringbone pattern on the glue surface. Our distributors will be delighted . . . and we think you'll soon discover to your own delight that Safetex reduces tape application costs.

SAFETEX SUPERSTANDARD GUMMED TAPE



CENTRAL PAPER COMPANY . MENASHA, WISCONSIN

For More Information Write No. 312 on Place Mark Card-Page 32

ODDLY ENOUGH,

not all companies in this country use our Phenolite® Laminated Plastics in their products.



Association News

(Continued from page 236)

is group leader.

Carolinas—November 7-8; Raleigh, N. C. Group leader is R. K. Johnson, Bob Jones University.

The Association will be represented at each of the original meetings by a national officer and the E & I Co-op will also have a representative attending each one.

Program Aids

To assist program chairmen in planning association meetings and company conferences, available film and other program aids will be listed in these columns from time to time.

"Conveyors for Parts, Assemblies, and Packages." New 16 mm sound film which portrays and describes all types of industrial conveyor systems—past and present. It shows how conveyors have progressed from the antiquated 1912 vintage up to those that play a vital part in today's highly automated industries. It is black and white and rents for \$4.00 from Herbert E. Farmer, Director of Services, Cinema Department, University of Southern California, Los Angeles 7, Calif.

"Silver Threads Amass The Gold."
New 16mm full color, sound film which features the larger, production, semi-production and maintenance type threading machines, including the correct operation of them. Running time is 25 minutes. Available from The Oster Manufacturing Company of Wickliffe, Ohio.

"Dimensional Gaging With Air." The film shows actual tests to illustrate basic principles of air gaging while demonstrations show the practical applications. Running time: 42 minutes. 16 mm, sound and color. It can be borrowed from Sales Promotion & Advertising Department, Federal Products Corporation, 1144 Eddy Street, Providence 1, R. I.



manufacturers who turn out appliances, airplanes, controls, computers, circuit breakers, clocks, lighting fixtures, missiles, motors, switchgear, transformers, typewriters...and other products that run with, or carry electricity.

The reason is: they get highest quality, broadest selection (over 80 grades), stocks for immediate shipment, standard forms or precision-fabricated parts.

The facts about Phenolite Laminated Plastics may brighten an electrical insulating problem for you. Write for them.

If you don't work with laminated plastics, ask about our Kennett Materials Handling Receptacles, Lestershire Bobbins, National Vulcanized Fibre or Parsons Fine Papers . . . more products made better by National Research.

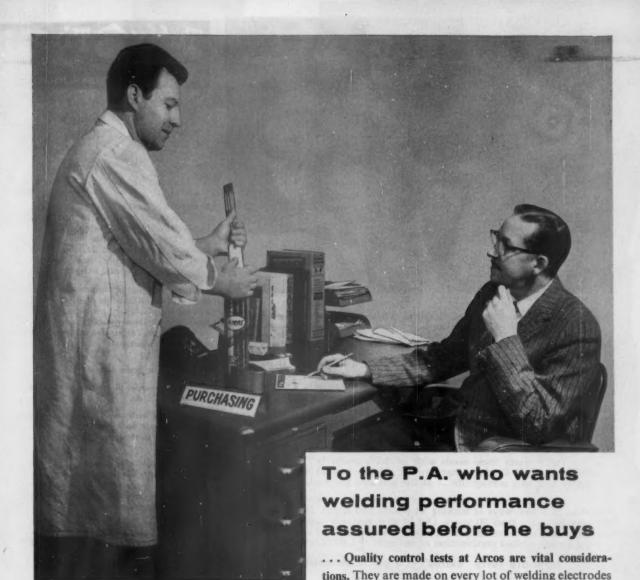


WILMINGTON 99, DELAWARE

Canada:

NATIONAL FIRST COMPANY OF CANADA, LTB., Tereste 3, General For More Information Write No. 313 on Place Mark Card—Page 32

PURCHASING





ARCOS CORPORATION 1500 S. 50th St., Philadelphia 43, Pa. to be sure that your own welding results will be exactly as promised. There are at least 18 separate controls to guarantee you high quality...low cost... trouble-free production. Whatever you weld, Arcos offers a full-line of products plus technical assistance, if needed, to make your purchasing decision

more profitable.

For full information on the Arcos line send for new Welding Guide and Catalog.



ASSURING CHEMICAL ANALYSIS



HARDNESS TESTING



INSPECTION OF WELD METAL



CHECKING COATING CONCENTRICITY

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ODDLY ENOUGH,

not all companies in this country use our Phenolite® Laminated Plastics in their products.



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ONLY a few thousand progressive manufacturers who turn out appliances, airplanes, controls, computers, circuit breakers, clocks, lighting fixtures, missiles, motors, switchgear, transformers, typewriters... and other products that run with, or carry electricity.

The reason is: they get highest quality, broadest selection (over 80 grades), stocks for immediate shipment, standard forms or precision-fabricated parts.

The facts about Phenolite Laminated Plastics may brighten an electrical insulating problem for you. Write for them.

If you don't work with laminated plastics, ask about our Kennett Materials Handling Receptacles, Lestershire Bobbins, National Vulcanized Fibre or Parsons Fine Papers ... more products made better by National Research.



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FIRCOS

ARCOS CORPORATION

1500 S. 50th St., Philadelphia 43, Pa.

... Quality control tests at Arcos are vital considerations. They are made on every lot of welding electrodes to be sure that your own welding results will be exactly as promised. There are at least 18 separate controls to guarantee you high quality...low cost... trouble-free production. Whatever you weld, Arcos offers a full-line of products plus technical assistance, if needed, to make your purchasing decision more profitable.

For full information on the Arcos line send for new Welding Guide and Catalog.



ASSURING CHEMICAL ANALYSIS



HARDNESS TESTING



INSPECTION OF WELD METAL



CHECKING COATING CONCENTRICITY



At Mount Rushmore National Memorial in South Dakota small fissures in the sculptured faces of Washington, Jefferson, Lincoln and Roosevelt are being sealed with granite dust and white lead. Though the granite sculpture is estimated to last for thousands of years, this preventive maintenance will keep the surfaces smooth and slow the natural erosion process. The insert shows how workmen are suspended on Union Wire Rope.

Tuffy is an old hand at new ideas

Whether it's better equipment for drilling deeper oil wells, or doing a "preventive maintenance" job like the one shown above, new needs for slings and wire rope are constantly coming along.

Tuffy meets these needs with products perfectly "tailored" to the job at hand. Products that give the ultimate in working efficiency, safety and long service life — at the ultimate low cost.

In Union research laboratories the quest is continuous for new ideas and new ways of making wire rope and slings. It's been that way for more than 30 years. Out of that research have come such important advances as Tuffy's 9-part machine-braided sling, famous for its unmatched combination of strength and flexibility.

Here are Tuffy "extras" you get at no extra cost



Tuffy's patented 9-part machinebraided fabric is a marvel of strength and flexibility. It makes knotting and kinking next to impossible. If a kink should occur, it's easily smoothed out, leaving no permanent damage.



Tuffy's pressed-on metal ferrule gives the tucked eye splice 100% of fabric strength. It's applied under tremendous hydraulic pressure—and streamlined to eliminate snags that might injure hands and arms.

For products you trust, service you rely on, the man to see is your Tuffy Distributor. Look him up in the Yellow Pages.





Safety in Hoisting Saves Costly Injuries

During a recent 12 months period, back injuries resulting in lost time totalled 32,643 in one state (California). Lost-time injuries caused by strain or over-exertion: 24,639. A high price to pay—in misery and money—for lifting, pushing and carrying loads.

Proper hoisting equipment, properly used and maintained, is one important answer to this injury problem. It may save your workers disabling accidents, and save you expensive absenteeism and lost production.

Rules for Safe Use of Hoists

- Don't let muscles do what a proper size hoist should do.
- Adequate hoists aren't expensive. With proper slings and hoist lines, they will help a lot in reducing injuries to workers.
- Use the right sling and hoist line for the job. Tuffy slings and hoist lines are tailored to every need, from the smallest block and tackle to giant cranes and other equipment.
- Don't assume that all slings are right for all kinds of lifting. Your Tuffy distributor will help you select the right ones.

FREE! New Tuffy Sling Handbook



Covers the subject from A to Z. All types, weights, dimensions, rated loads and other data for slings and sling fittings. Write Union Wire Rope Corporation, 2282 Manchester Ave., Kansas City 26, Mo. Specialists in high carbon wire, wire rope, braided wire fabric and stress-relieved wire and strand.

UNION Wire Rope

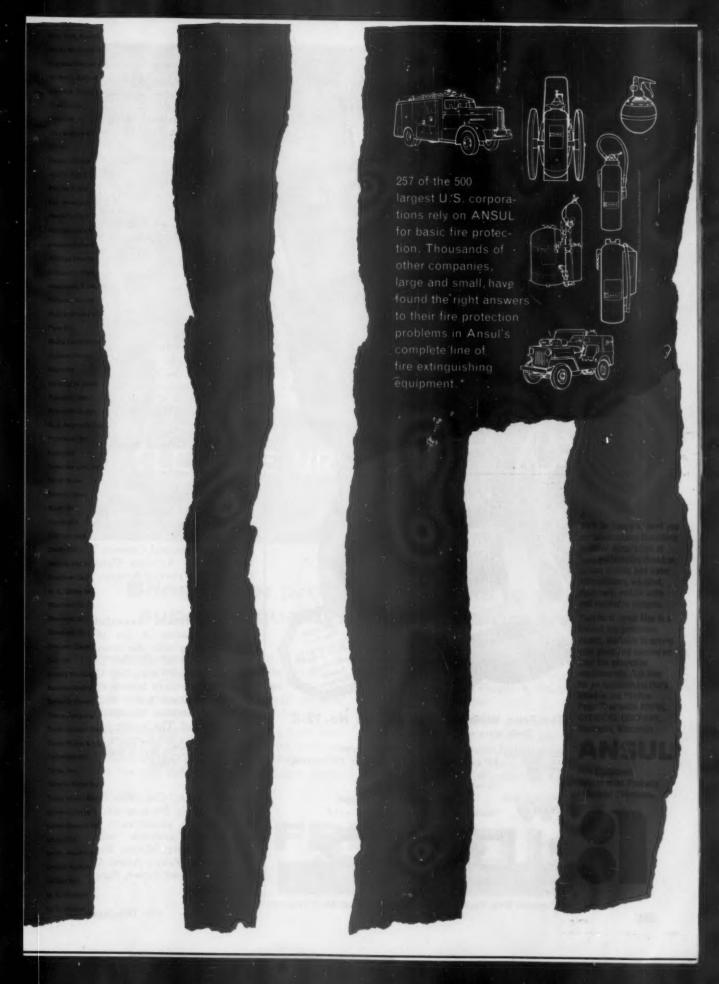


Subsidiary of ARMCO STEEL CORPORATION

OTHER SUBSIDIARIES AND DIVISIONS: Armco Division • Sheffield Division • The National Supply Company Armco Drainage & Metal Products, Inc. • The Armco International Corporation • Southwest Steel Products

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PURCHASING





Hand Carrier Free With All Sets Except No. 12-R (Order in sets or any combination)

Exposed Ratchet Type

For pipe: ½" to 1"-00-R; ½" to 1¼"-111-R;
½" to 2"-12-R

For bolts: ¼" to 1"-00-RB

Enclosed Ratchet Type For pipe: 1/4" to 1"-0-R; 1/4" to 11/4"-11-R



For More Information Write No. 317 on Place Mark Card-Page 32

Program Aids

"Getting Acquainted With Plastics." An educational progam offered by Cadillac Plastic & Chemical Company for in-plant presentation. A minimum audience of 20 is required. The program includes 10 minutes of color slides, visual demonstrations, table top displays, and a photographic exhibit of industrial plastics applications. For information write: Robert B. Jacob, Cadillac Plastic & Chemical Co., 15111 Second Avenue, Detroit 3, Michigan.

"Specialty Steels." Description of how special purpose steels of all shapes are produced. It is a 45minute color film and may be obtained by writing Michael Stumm, Director of Information Services, Crucible Steel Co., P. O. Box 2518, Pittsburgh 30, Pa.

"Numerical Control Manufacturing." This film shows the advantages and cost savings resulting from the use of numerically controlled machine tools and how they are used in typical applications. It is 16 mm, in color with a running time of 22 minutes. Write to: Industrial Controls Section, Bendix Aviation Corporation, 21820 Wyoming Avenue, Detroit 31, Mich.

Abrasive Grain Association Speakers Roster—A list of 14 topics dealing with the manufacture and use of abrasive materials was recently compiled. Qualified speakers have been assigned to each of these topics and the names of persons to contact is also included. The roster can be obtained from the Abrasive Grain Association, 2130 Keith Building, Cleveland 15, Ohio.

"Sneak Attack." Color film depicting how easily fire may strike. It is a 16 mm presentation with sound and available without charge. Contact: Motion Picture Department, Falcon Alarm Company, 243 Broad Street, Summit, New Jersey.



Bring lower production costs to you, superior quality to your customers

Reduced production costs. Du Pont "Freon", as an auxiliary blowing agent, now permits you to control the density of your flexible urethane foams. Result—you can produce a greater volume of urethane foam from the same amount of raw materials.

improved foam quality. By controlling foam density, you can now provide customers with urethane foams that meet their cushioning needs more closely—foams that are softer and more resilient, foams

that permit thinner cushioning. Yet you provide all of the other physical advantages of urethane foams to customers in the furniture, bedding, carpet and automotive industries.

For more Information on how "Freon" blowing agents can help you produce greater volumes of higher-quality urethane foams, write: E. I. du Pont de Nemours & Co. (Inc.), "Freon" Products Division, N-2420, Wilmington 98, Delaware.

FREON®



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

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REPUBLIC COLD EXTRUSION QUALITY STEEL

... steel that cuts your cost of production

Republic Steel—largest producer of the nation's widest range of bar products—has a new, 11" bar mill in Chicago that specializes in steel for cold extrusion and cold heading. Features that save you money:

- UNIFORM FLOW CHARACTERISTICS—carbon and alloy steels produced on this mill have denser, more uniform structures because they undergo more hot work. Bigger than usual billets, 3" and 4" square, become finished products of standard size.
- PRECISE DIMENSIONAL ACCURACY—16 alternating vertical and horizontal stands with roll neck bearings are utilized to exert uniform pressure on all sides of the bar. This process, along with vertical looping above the mill, eliminates deformations.
- ANNEALED, NORMALIZED, SPHEROIDIZED—new continuous annealing furnaces, capable of all types of furnace treatments, are designed for rigid control of speeds, temperatures, and atmospheres. Other facilities are available to pickle, oil, lime, phosphate, and borax coat bar products.
- 1600-POUND, DOUBLE-BANDED COILS—four high-speed coilers handle the complete range of coils produced (%" to 8%4"—700 to 900 pounds, %" to 1½"—1400 to 1600 pounds). Bigger coils cut downtime and scrap loss. Double banding simplifies your handling.
- CAPACITY TO MEET YOUR REQUIREMENTS—this 11" bar mill produces bar products at rates of up to 3000 feet per minute. Annealing furnaces are the continuous type, capable of meeting the growing demand for furnace-processed steel.



COLD FINISHED, TOO!

Depending upon the nature of your product and the method by which it is made, you may find it more advantageous to use cold extrusion quality steel in *cold finished form*, as did the manufacturer of this gear.

We would welcome an opportunity to serve you on your requirements for both bot rolled and cold finished, cold extrusion quality steel. Our metallurgists will help you select the most economical carbon, alloy, or stainless steel capable of meeting your requirements. For complete data, call your nearest Republic sales office or mail the coupon.

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CUTTING THE COST OF A SEGMENT GEAR: ideal blanks are produced by cold heading, cold extrusion, and upsetting. Stock with upset in the center is hot trimmed on a press, after which it is machined into the finished part. Only a minimum of stock need be removed during final machining. Photo courtesy of National Machinery Company, Tiffin, Ohio.



REPUBLIC STEEL

World's Widest Range of Standard Steels and Steel Products

SEE OUR EXHIBIT



REPUBLIC STEEL CORPORATION

DEPT. PH- 1131 1441 REPUBLIC BUILDING . CLEVELAND 1, OHIO

Send more information on cold extrusion and cold heading quality steel.

☐ Hot Rolled

Cold Finished

Company.

Address.

Zone__State.

shows you

the widest choice of floor trucks in the world can cut your costs!

For regular or "special" design floor trucks it pays to talk to Nutting first. Here's why: no other company makes more models, sizes or combinations of equipment than Nutting. Many times items which you may find listed as "specials" with other makes are regular equipment in Nutting's complete line. As a result you get "custom built" trucks at production line prices. You not only get overall lower prices; you also get the benefit of 68 years of experience, design "know-how" and modern manufacturing skills. To save valuable hours of your time and get the right equipment for your plant, talk to a Nutting representative first, for all your floor truck needs!

Nutting makes over 1000 products, here are just 16 of them



Dollar for dollar, feature for feature Nutting is your best floor truck buy. Write for your free copy of new Junior Catalog 59G.



	TRUCK & CASTER COMPANY on Street • Faribault, Minnesota
	nd copy of Junior Catalog 59G.
NAME	
	Y NAME
COMPAN	

For More Information Write No. 320 on Place Mark Card-Page 32

Program Aids

"A Letter To Moscow." A 28-minute color film portraying the strength of the American economic system of free enterprise. The 16 mm motion picture is available from Armstrong Cork Company, Lancaster, Pa.

"Dollars and Sense." Sound and color slide film illustrating applications and advantages of pneumatic-tire fork truck of 15,000 to 40,000 lbs. capacity. Running time is 20 minutes. Write to: Slide Film Department, Industrial Truck Division. Clark Equipment Company, Battle Creek, Mich.

"Arc Welding Electrode Selection." A 25-minute, 16 mm, full color film that tells the story of basic factors which are important for correct electrode selection. It outlines a step by step procedure that covers base metal identification, welding currents, welding positions and job conditions. Reservations may be made with the Film Library, Hobart Brothers Co., Troy, Ohio.

Book Reviews

Interdepartmental Relations

Prepared by the Project Committee on Relations with Other Departments, National Committee for Professional Development, National Association of Purchasing Agents. Single copies free to N.A.P.A. members on request.

"Purchasing agents are in no position to demand recognition—they must first deserve, then command it—and one prime means for commanding it is through successful interdepartmental relations."

This is the theme of the new 16-page pamphlet on "Interdepartmental Relations" just published by the National Association of Purchasing Agents. The pamphlet outlines the factors involved in establishing and maintaining good relationships with

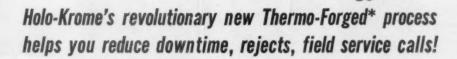
(Please turn to page 252)

For More Information about ad on facing page

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PURCHASING





After years of intensive research, Holo-Krome has discovered the "better way" to make Socket Screws. The most dramatic innovation in socket screw manufacture in 28 years, H-K's radically new continuous warm forming process produces socket screws near-perfect in structure and of a uniform accuracy and quality never before possible!

When you count the dollars an hour's downtime costs . . . or the cost of one day's rejects . . . or the price of just one field service call-you'll be quick to see *Trade Mark of The Holo-Krome Screw Corporation

how important it is to specify Holo-Krome's THERMO-FORGED Socket Screws. Order these top quality Socket Screws from any one of H-K's nationwide corps of authorized distributorsor write us direct for the names of distributors in your area.

HOLO-KROME Thermo-Forged*

SOLD ONLY THROUGH AUTHORIZED HOLD-KROME DISTRIBUTORS THE HOLO-KROME SCREW CORPORATION . HARTFORD 10, CONN.

GAYLORD PITCHES IN WITH TOTAL PACKAGING SERVICE

Gaylord rolls up its sleeves to work on every phase of your packaging—from the gleam of a researcher's new idea to your glow of satisfaction with on-time delivery. If you're looking for a strong right arm to put more muscle into your packaging operation, call your nearby Gaylord Man. He arrives ready for work.





CROWN ZELLERBACH CORPORATION
GAYLORD CONTAINER DIVISION



IN CANADA - CROWN ZELLERBACH CANADA LTD. VANCOUVER. B. C.

HEADQUARTERS, ST. LOUIS PLANTS COAST TO COAST

Count on your SIMONDS DISTRIBUTOR



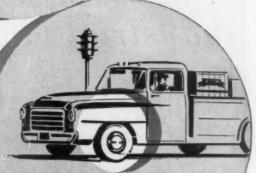
SAVE MONEY

No need to tie up capital in large inventory. Your Simonds distributor carries complete stocks..and can suggest order quantities that give you the best price break.



LOCAL STOCK

His stockroom is your storeroom, with an ever-ready supply of the wheels you need . . . thus releasing your own space for more productive purposes.



FAST SERVICE

No production hold-up because of distant shipments. Your Simonds distributor is locally situated . . . and at your call anytime.

... and count on SIMONDS Grinding Wheels

for top performance and top results

Get the exact grinding wheels for your jobs from industry's complete line... including wheels for rough snagging precision grinding, cutting-off, tool grinding, and weld grinding. Also Diamond Wheels. Simonds product quality plus up-to-the-minute distributor service is the ideal combination for saving you time, money and materials. Make a point of getting to know your Simonds distributor. A You'll find him mighty helpful in emergency situations, as well as for prompt supply of everyday needs.



WEST COAST PLANT: EL MONTE, CALIF.—BRANCHES: CHICAGO • DETROIT • LOS ANGELES • PHILADELPHIA • PORTLAND, ORE. • SAN FRANCISCO SHREVEPORT — IN CANADA: GRINDING WHEELS DIVISION, SIMONDS CANADA SAW CO., LTD., BROCKVILLE, ONTARIO • ABRASIVE PLANT, ARVIDA, QUEBEC

For More Information Write No. 323 on Place Mark Card-Page 32

For More Information about ad on facing page Write No. 322 on Place Mark Card—pg. 32

Остовен 10, 1960

NORPLEX

SUPERIOR QUALITY industrial laminates

laminates are produced in accordance with standard N.E.M.A. specifications and MIL-P specifications. Many special grades including a variety of copper clad laminates for the manufacture of printed circuits are also available.

Northern Plastics Corporation produces over 60 standard grades to meet your requirements for flame retardancy, low power factor @ 60 cycles, arc resistance, cold punching, minimum odor, high insulation resistance and excellent mechanical properties.

may we send you our brochure?

NORTHERN PLASTICS CORPORATION

La Crosse 8, Wisconsin
Offices in Principal Cities



Book Reviews

(Continued from page 248)

other departments in the company. Engineering, manufacturing, sales, traffic and finance are mentioned as areas where sound interdepartmental communications must be set up.

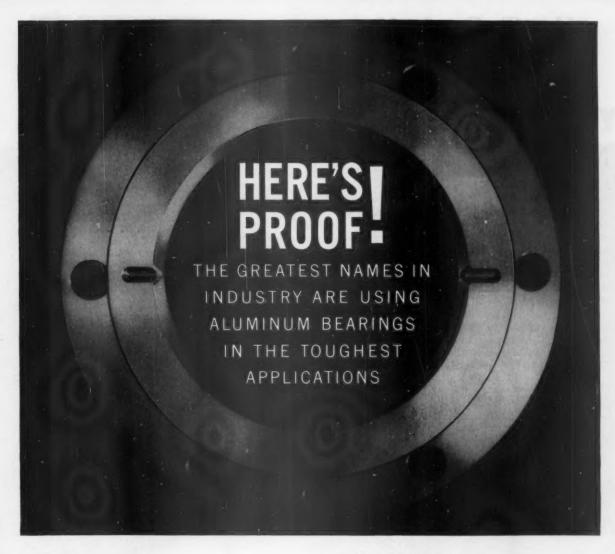
The best way to receive cooperation from other operating departments, the pamphlet states, is to show them that the purchasing department is doing a good job of procurement, and is making their work load easier. Care must be exercised to avoid stepping on other people's toes. Positive action to solve the problems of other departments is better than criticism of the operations of these departments.

Human relations plays an important part in this field. Since purchasing is a service department as well as a profit-making function, it must sell its services to the other departments as a creative function. Good communication must be maintained through the written word, the spoken word, and the psychological effect of job performance and personal performance.

Engineering cooperation is extremely important. The development of good relationships with engineering will aid in setting up many successful purchasing activities throughout the company. And, of course, the same principle applies to the manufacturing department.

Other methods of improving interdepartmental relations outlined in the pamphlet include indoctrination of graduate trainees of the company, the use of purchasing manuals as a means of communication between departments, and holding management seminars with each major department of the company.

The pamphlet is concise and clear. No attempt is made to gloss over areas where purchasing may be sensitive or overpossessive. While not a detailed manual of procedure, it is a thought-provoking and valuable guide to setting up a good program of internal relationships. It belongs on every purchasing agent's bookshelf.



COMPANIES

Anderson, Inc. Bendix Products Div., Bendix Aviation Corp. Boeing Airplane Co. Bucyrus Erie Co. Caterpillar Tractor Co. Clark Bros. Co. Clark Equipment Co. Clearing, Division of U. S. Industries, Inc. Cleveland Crane & Engineering Co. Cooper-Bessemer Corp. John Deere Diamond Alkali Co. Fairbanks-Morse Co.

Hardinge Company, Inc. Ingersoll-Rand Co. Manning, Maxwell and Moore, Inc. Marion Power Shovel Co. McCulloch Corporation Morgan Construction Co. Nordberg Mfg. Co. Northern Engineering Co. Pesco Div., Borg-Warner Schramm, Inc. Waukesha Motor Co. S. S. White Dental Mfg. Co. Worthington Corp. York Process Equipment Corp.

... and there are many, many others!

For information on aluminum bearings see your bearing manufacturer, or write Aluminum Company of America, 1841-K Alcoa Building, Pittsburgh 19, Pa. For aluminum bearing stock, see your nearest Bunting Distributor.

World-wide sales through Alcoa International, Inc. 230 Park Avenue, New York 17, N. Y.

APPLICATIONS for bearings and bushings: aircraft landing gear

- turbines
- cranes
- hydraulic pumps
- · air-conditioning equipment
- · diesel engines
- · railroad car journals
- compressors
- combination engines-compressors
- forming presses
- stationary engines
- marine engines

- · track rollers
- gear reduction units
- lathes
- starting engines
- power shovels
- superchargers
- rolling mills
- aircraft engines
- aircraft controls
- milling machines
- · automobile engines
- · grinding mills



ALUMINUM COMPANY OF AMERICA

For More Information Write No. 325 on Place Mark Card-Page 32

How To Get the Most Out of Negotiation

By Edward M. Krech,

Director of Purchases, J. M. Huber Corp.

NEGOTIATION, defined by Webster as "conferring regarding a basis of agreement," is as old as purchasing itself. However, negotiators use many methods to obtain their ends, and results vary with the way in which these methods are applied. Successful negotiation depends to a large extent on finding the approach best suited to the product or commodity involved.

Products which are industry priced and subject to published discounts, might appear to offer no opportunity for negotiation. This is far from the truth. Many fringe benefits can be gained by negotiation, such as: grouping orders for quantity discounts, splitting shipments to one destination with price based upon total quantity, obtaining favorable price and inventory protection by vendor stocking arrangements, or by gaining concessions for packaging or palletizing charges.

Careful negotiations can frequently lower shipping costs by selecting lower cost carriers, or by using combined shipments or customer equipment on back hauls or short fill-in trips. Terms of payment can frequently be negotiated. Although cash discounts are usually standard in an industry, it is still possible to ar-



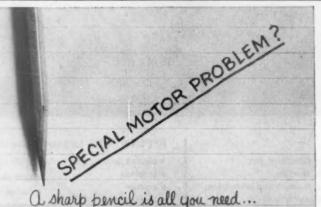
E. M. Krech

range for payments on fixed days, i.e., 1% 10th prox. instead of 1-10-30. This will assist accounting and usually affords a slightly longer use of the money involved.

Occasionally it is possible to modify by negotiation the specification of a standard product, thereby eliminating an operation and reducing the manufacturer's costs without disrupting his production routine. This is a form of

(Please turn to page 260)

This article is based on talks that Mr. Krech has given for the benefit of the purchasing profession.



Jot your special motor application problem down and send it to Lamb Electric...will do the thinking, design and manufacture. You get the right motor, "custom-tailored", and mass produced at the most favorable cost...

Special Application Fractional Horsepower Motors



Explosion-proof, totally enclosed, fan-cooled. For high pressure grease guns. Frame: 311/6 x 21/4.



Heavy duty industrial motor for portable concrete vibrator. Frame: 4% x 2%.



THE LAMB ELECTRIC COMPANY • KENT, OHIO
A Division of American Machine and Metals, Inc.
In Canada: Lamb Electric — Division of
Sangamo Company Ltd. — Leaside, Ontario

Divisions of American Machine and Motals, Inc., New York 7, N. Y. TROY LAUNDRY MACHINERY . RICHLE TESTING MACHINES . DE BOTHEZAT FARS . TOLHURST CENTRIFUGALS
FILTRATION ENGINEERS . FILTRATION FABRICS . NIACARA FILTERS . UNITED STATES CAUGE . RAHM INSTRUMENTS . LAMB ELECTRIC CO. . HUNTER SPRING CO. . GLASER-STEERS CORP.

For More Information Write No. 326 on Place Mark Card-Page 32

For More Information about ad on facing page Write No. 327 on Place Mark Card—page 32→ PURCHASING

compare

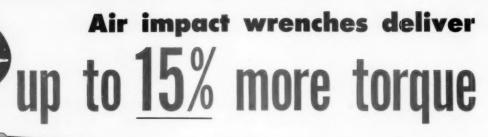
TORQUE · PERFORMANCE · DEPENDABILITY



BUY

AIR or ELECTRIC

IMPACT WRENCH



while consuming 30% less air!

NO. 322

Superiority of their mechanical design is revealed in the

unusual efficiency of Sioux Air Impact Wrenches. Wrench for wrench, model for model, size for size, Sioux can be counted upon to deliver an average of 15% more torque, while consuming 30% less air! Less power is absorbed by the wrench itself. More is applied to the drive. Three Sioux

wrenches can be operated on the existing air supply for every two of another kind. This correctness of engineering design has also produced a wrench of superior endurance, longevity, and freedom from trouble. Low first cost, higher torque, lower air consumption and long trouble-free life add up to make Sioux the Big Buy in Air Impact Wrenches!

No guess CERTIFIED STOUX POWER work with

When it's a Sioux, you know what it will do! Sioux tells you the torque your air or electric impact wrench will deliver. You don't buy just a wrench. You buy certified Sioux power, reversible power, and on air wrenches controllable power through eight point power selector.

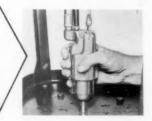
REACTION BALANCED for

Less Vibration Feed Back

All Sioux Impact Wrenches are "reaction balanced" for less vibration and torque feedback and for minimum operator fatigue. There's less shock and twist when the wrench impacts. You can feel the difference!

A SIZE FOR EVERY NEED!

From the big No. 322 Sioux Air Impact Wrench (upper left) capable of up to 1,000 foot pounds of torque at 90 pounds of air pressure, to the little No. 313 (pictured at right) which weighs $2\frac{1}{2}$ pounds and can deliver up to 80 foot pounds of torque, there's a full range of Sioux impact wrench sizes and models.



SIOUX

Electric

IMPACT
WRENCHES



power in right or left hand rotation. The torque for each wrench is stated and certified. Their mechanical design offers exactly the same advantages as that of the air wrenches. Their exclusive reverse cap switch lock prevents reversing with the current on, and eliminates burning commutator brushes and switch contacts. Their efficiency, performance, and freedom from trouble are unexcelled.

Look under "TOOLS, ELECTRIC" in the Yellow Pages

ALBERTSON & CO., INC.

SIOUX CITY, IOWA . U.S.A.

AIR IMPACT WRENCHES • AIR SCREWDRIVERS • ELECTRIC IMPACT WRENCHES • ELECTRIC SCREWDRIVERS • DRILLS • GRINDERS • SANDERS • POLISHERS • FLEXIBLE SHAFTS • PORTABLE SAWS • VALVE GRINDING MACHINES • ABRASIVE DISCS





Get more battery capacity per dollar per year. For years, Exide-Ironclad Battery users have consistently reported unequaled battery economy. Now the new TGS Exide-Ironclad Battery gives you another 11% more capacity with no increase in battery size. Your trucks can do still more work per shift, and you get greater economy than ever.

Use efficient chargers. Exide vertical chargers are specially designed for industrial truck service. They give you actually more charging capacity for the price. Vertical design saves two-thirds floor space, keeps out dirt for lower-cost upkeep. Oversize bearings, dual-protected by bearing seals and external dust shields, prolong charger life.

Keep your equipment functioning. Regular inspection by capable service men is a real economy measure. And no service matches Exide service—over 160 men in 47 offices coast to coast. All are factory trained—specialize in Exide industrial batteries and chargers. They help you get the maximum life and economy from your batteries.

GET THE COMPLETE EXIDE POWER PACKAGE: BATTERIES, CHARGERS, SERVICE. For additional information, write Exide Industrial Division, The Electric Storage Battery Company, Philadelphia 20, Pa.

Exide

"Not one failure in 10 years with (American springs"



Mr. Lee Dunn, Sales Manager of Walter Balfour & Co., Inc., tells why American Steel & Wire Springs are used in Balfour Doc-Port Rolling Steel Pier doors.

"The springs in our doors have to be exceptionally tough and dependable," says Mr. Dunn. "The performance of the doors is dependent upon the quality of the springs. The springs must act uniformly over their entire length because the doors must be perfectly counter-balanced at every point of travel. Springs of the same wire diameter and coil diameter must have identical characteristics. In the ten years we've been using American Steel & Wire springs, we've never experienced a failure.

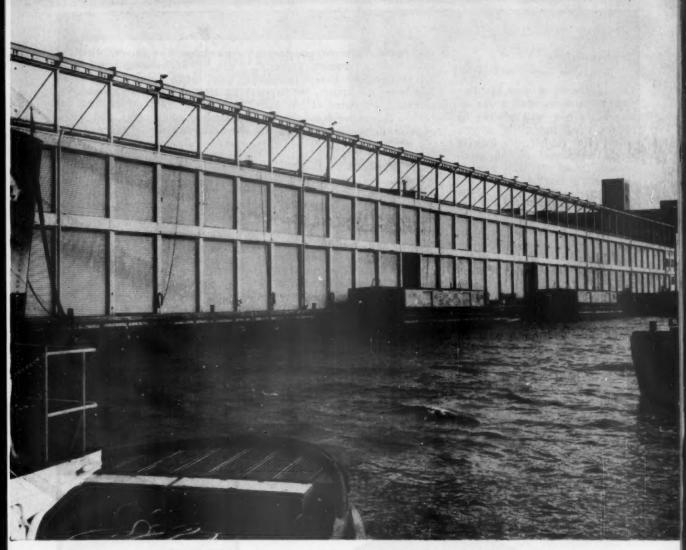
"Most of the USS American springs used by the Balfour Company are made from %" cold wound wire. In the larger steel pier doors there are actually multiples of our helical torsion spring sizes . . . %", %", ½", and ½". Springs are nested one within another, each spring mounted on shaped cast anchors which are fixed to a single torsion rod, so that the springs are equally and simultaneously loaded."

When springs are your special problem, come to American Steel & Wire. Our Spring Engineering Service has a solid reputation for coming up with the right answer at the right time. They'll be glad to pitch in on your problem. Give us a call today, or write American Steel & Wire, Dept. 0401, 614 Superior Avenue, N.W., Cleveland 13, Ohio.

USS and American are registered trademarks

Cold wound springs in Balfour doors are placed inside steel cylinders and fixed on each end to anchors that prevent internal collapsing of the springs at contact points.





Balfour doors are exposed to heavy wind loads and salt water spray, but they can take it-and so can the USS American springs.



3000 lbs. ride on each USS American spring assembly every time these big 18' x 24' Balfour Pier doors open and close. It takes rugged, long-lasting springs to stand up under this kind of punishment.



American Steel & Wire Division of United States Steel

Columbia-Geneva Steel Streton, See Francisco, Pocific Coast Distributors Tennossee Coal & Iron Sirision, Fairfield, Alabama, Southern Distributors United States Steel Export Company, Sistributors Abroad



This mark tells you a product is made of modern, dependable Steel.

Negotiation

(Continued from page 254)

value analysis and opens the door wide to price negotiation. An intelligent buyer will always be asking, what, how, why, where, when. He cannot overlook a single component of the product's delivered cost if he expects to negotiate intelligently.

Negotiation is a must when buying finished or semi-finished items produced on a volume basis to the customers specifications. Costs of various suppliers must be determined and carefully checked by the buyer. In some cases a make or buy decision may have to be made. The intensity of the negotiation will be determined by the amount of competition and the limitations imposed by the customer on specifications, quantities, deliveries and long term potential. But a reasonable profit must be allowed.

Among the vendor costs that must be evaluated are labor rates, overhead, depreciation factor, technical assistance, packaging, raw material sources, purchasing know-how, production capacity, and equipment. Every facit of cost must be known, evaluated and then negotiated. If you want to do a thorough job get the help of your engineering and accounting departments.

Develop Mutual Respect

Negotiating prices based upon such full information will materially reduce the margin or error for both buyer and seller and will also develop mutual confidence and respect. However, never divulge confidential information. Ideas and constructive criticism should be passed along to all interested vendors provided no confidences are violated.

Some special points must be considered when negotiating for highly specialized products individually designed and produced for a specific use, such as machine tools or special equipment. Generally competition is limited; occasionally it doesn't exist. Negotiating a satisfactory agreement involves important additional

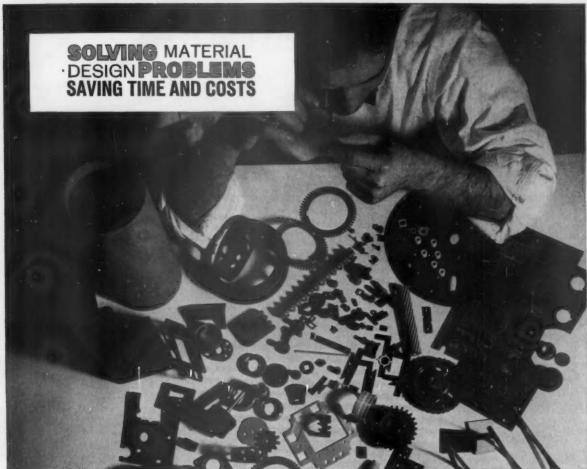
principles. The buyer, with the help of engineering must negotiate design costs, testing costs, fabricating costs for components, purchase cost plus handling for standard components, and workmanship, material, and performance warrantees.

The main problem here is to keep engineering and production from making commitments until these costs, and warrantees are clearly understood and agreed upon by both buyer and seller. Service, spare parts, and in some cases patent protection, must also be provided for.

Terms of payment must be fair to the vendor and safe for the buyer. To negotiate terms satisfactorily it is mandatory to know when the vendor has to pay for material, when fabricating or labor costs are due and when erection or assembly costs are incurred. It is essential to withhold for at least 30 days from 10% to 25% of the purchase price. The amount withheld usually represents profit, so the buyer is not

(Please turn to page 264)





Reliable plastic components are the result of the right material plus quality fabricating. Your CDF Sales Representative may be able to help you both ways.

Helping you turn out a better product and saving you production time and costs are basic functions of the CDF Sales Representative.

He can recommend the correct industrial plastics material to meet your requirements because he offers a line of more than two hundred grades . . . the most complete available. He's experienced in plastics problem-solving for every type of industry.

He can also tell you about other CDF services. One is fabrication of plastic parts to your specific requirements. CDF facilities, for practical purposes, become an extension of your own production lines. Another service is CDF's in-plant technical assistance.

If you have a problem in plastics, your CDF Sales Representative is a good man to see.



CONTINENTAL-DIAMOND FIBRE

A SUBSIDIARY OF THE ______ COMPANY • NEWARK 41, DEL.
In Canada, 46 Hollinger Road, Toronto 16, Ont.



In-plant technical assistance is always available. CDF Applications Engineers will work with your design and production people . . help you solve problems involving plastics.



Extensive CDF fabricating facilities for machining, molding, and forming plastic parts to your own specifications. The most modern equipment and experts in fabrication are ready to handle any size order.



The widest selection of industrial plastics comes from CDF. The line includes epoxies, phenolics, copper-clad laminates, as well as vulcanized fibre and Micabond. They offer a variety of properties and uses.

For More Information Write No. 331 on Place Mark Card-Page 32

For More Information about ad on following page Write No. 332 on Place Mark Card—pg. 32→

FROM CRUCIBLE LOCAL STEEL CENTERS*

YOU DON'T EVEN PAY FOR THE CALL. Free "ENTERPRISE" phone calls to the nearest Crucible steel center are available in most areas. For details, ask the Crucible service engineer who visits you.

"DIAL DELIVERY"



FOR ANY STEEL, ANY SERVICE, call the inside account salesman who services your company. He's your contact with the entire, integrated Crucible operation.



HIGH STOCK LEVELS OF STEELS, including Crucible's tremendous range of tool steels, enable each steel center to fill customers' largest orders at once.



FLEET OF TRUCKS AT EACH CENTER leaves regularly for customers' plants. Your order arrives at your receiving docks dependably on schedule,

Crucible's integrated operation enables you to order 16,000 specialty steel items — and confirm local delivery — with a single phone call.

Run down the list of special steels you need. You can get all of them—tool steels, high speed, stainless, alloy steels—immediately from the local Crucible steel center. This center is a single, integrated source for every steel and it saves time and money for you.

The steel center's procedures make ordering convenient, too. The inside account salesman can almost always confirm in-stock delivery of your order. But if he can't (which rarely happens), he can quickly locate them at other centers or at the mill. And he can do this while you're on the phone—

because of Crucible's electronic inventory control and teletype systems.

The Crucible local steel center maintains all the facilities for fast service. It has a battery of saws: huge hacksaws and fast-cutting bandsaws that quickly process your order. And it has a fleet of trucks at its command. So, orders get underway the moment you hang up the phone.

A single phone call brings the services of Crucible's entire operation — integrated from steelmaking to local delivery to you. Crucible Steel Company of America, Dept. PJ13, Pittsburgh 30, Pa.

MONTHLY STOCK LIST gives you up-to-date news on local stocks of specialty steels. Ask the Crucible salesman to put your name on the mailing list.

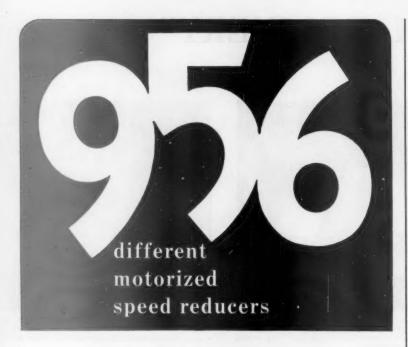


**FROM CRUCIBLE LOCAL STEEL CENTERS: TOOL STEELS — Water, oil, air hardening, shock resisting, hot work, plastic and die casting steels in all forms, including bars, sheets, plates, drill rod, hollow bars, forgings and flat ground stocks * HIGH SPEED STEELS — Crucible's famous "Rex" steels: Rex Thrift Finish rounds, hot rolled and cold drawn flats and squares, drill rod, forgings, sheets, plates, and tool bits * STAINLESS STEELS — Bars, sheet, strip, wire, cold heading wire, metalizing wire, plates, angles * FREE MACHINING STEELS — Crucible Max-el® rounds, hexagons, plates and brake die steel * ALLOY STEELS — Bars, billets, strip and sheet * COLD ROLLED CARBON SPRING STEELS * DRILL STEELS — Hollow and solid drill steels * ALUMINUM EXTRUSION DIE STEELS * HOLLOW TOOL STEEL * HARD FACING ROD * PLASTIC MOLD STEELS * PERMANENT MAGNETS * and many others.

CRUCIBLE

STEEL COMPANY OF AMERICA

BRANCH OFFICES AND STEEL CENTERS: Atlanta * Baltimore * Boston * Buffalo * Caldwell, N. J. * Charlotte * Chicago * Cincinnati * Cleveland * Columbus * Dallas * Dayton Denver * Detroit * Erie, Pa. * Grand Rapids * Houston * Indianapolis * Los Angeles * Miami * Milwaukee * Minneapolis * New Haven * New York * Philadelphia Pittsburgh * Portland, Ore. * Providence * Rockford * Salt Lake City * San Francisco * Seattle * Springfield, Mass. * St. Louis * E. Syracuse * Tampa * Toledo * Tulsa



available from stock

Yes! 956 different combinations of Perfection Motorized Worm Gear Speed Reducers are available for immediate delivery, from stock. Ratios range from 5 to 1 to 60 to 1,

in capacities from 1/6 H.P. to 5 H.P. Perfection "C" Flange Reducers may be ordered complete with motor or without motor, to be used with a motor of your own choice.

Flanged motor reducers offer the maximum in compactness, rigidity and adaptability. Through the use of standard NEMA face mounted motors, complete interchangeability between motors is provided. Motor maintenance is possible without disturbing the drive and reducer. Motor assembly is fast and positive with no alignment problems.

Write for your free copy of our new 28 page catalog containing illustrations, charts and tables to help you choose the right Reducer for your particular application. Ask for Bulletin No. M-140.

Licensed under Pat. 2,868,031



AMERICAN STOCK GEAR DIVISION PERFECTION GEAR COMPANY, HARVEY, ILLINOIS

For More Information Write No. 333 on Place Mark Card-Page 32

Negotiation

(Continued from page 260)

putting a financial squeeze on the seller. Instead he is only insuring technical help until the product is performing properly and in accordance with the warranty.

Negotiation requires at all times tact, patience, diplomacy, integrity and fairness on the part of both buyer and seller. Both parties must have the authority to represent their respective companies. Agreements must be ethical and legal. In cases of long term commitments, provision must be made for review and revision at stated intervals. Methods, materials, and conditions change. Contracts must be flexaccommodate ible to changes.

News

New Synthetic Rubber Duplicates Tree Rubber

A new man-made rubber which exactly duplicates tree rubber could make the United States and Canada independent of foreign natural rubber sources, says J. W. Keener, president of B. F. Goodrich Company.

The rubber is a "syntheticnatural" type and is called Ameripol-SN. A license to produce the material is now available to manufacturers through Goodrich-Gulf Chemical, Inc., owned jointly by Goodrich and Gulf Oil Corporation.

The first duplication of the molcule of tree-grown rubber was accomplished in 1954. According to Keener, "This new rubber not only adds another important strategic material to our resources for national defense, but will assure improved tires and other products which before could only be made with tree rubber grown on opposite sides of the world."

Goodrich says that natural, or tree rubber, is preferred for certain classes of products. Nevertheless, almost 66% of all the new rubber consumed in the U. S. last year was man-made.

For More Information about ad on facing page Write No. 334 on Place Mark Card—pg. 32→ PURCHASING



New paper withstands 90% humidity for 360 hours

(More packaging news from International Paper)

Read how this new moneysaving kraft paper withstood two weeks of constant high humidity.

To prove the moisture-resistant quality of International Paper's new Hy-poly kraft, we subjected it to this severe test.

The Hy-poly bag was filled with an extremely hygroscopic chemical and steamed in 90% relative humidity at 100° F. for 360 hours. (Unprotected, under these conditions, the test chemical takes on $2\frac{1}{2}$ times its weight in water in about one hour.) When the bag was opened, 15 days later, the crystals were as dry as sand.

New Hy-poly not only resists humidity, it saves you money, too. From \$2 to \$16 per thou-

sand multiwalls. And with a coating about *half* as thick as medium- and low-density sheets, you get equal, if not greater, moisture-vapor protection.

Hy-poly is available in both bleached and natural Gator-Hide⊕ kraft and in our new Gator-Hide Extensible Kraft.

The constant development of new packaging papers requires vast resources, skilled craftsmen and modern facilities. We have all three.

That is why International Paper can provide you with the widest range of papers, boards and packaging assistance in the industry. Call us or contact your converter—he's probably been doing business with us for years.





INTERNATIONAL PAPER New York 17, N. Y.

Manufacturers of papers for magazines, books and newspapers • papers for home and office use • converting papers • papers and paperboards for packaging • shipping containers • folding cartons • milk containers • multiwall bags • grocery and specialty bags and sacks • pulps for industry • lumber, plywood and other building materials

News

Navy to Buy Metals For Armed Forces

Beginning next January 1st, buying, handling, and distributing virtually all of the metals for the armed services will be handled by the Navy. The three armed forces now buy \$31.4 million worth of metal annually.

The new procedure is part of the Defense Department's Single Manager program. The Navy will buy ferrous and nonferrous material through its Military Industrial Supply Agency (MISA), headed by Captain John W. Bottoms, USN.

Centralization will make it easier for suppliers because they will have to deal with only one organization. According to Capt. Bottoms, "The Navy has more use for metals than any of the other services combined." Last year, the Navy purchased \$21.5 million worth of metals.

About 12,000 of the 18,468 metal

categories classified by the government will be purchased by MISA. in Philadelphia. These include plate, sheet, structurals, angles, tool steels, drill rods, lead, zinc, wire, and aluminum foils. The items which the individual services will continue to buy are generally specialized and used as integral parts for special weapons.

Later in 1961, MISA will take control of hardware and abrasive buying for the three armed serv-

Vendor Helps P.A.'s With Value Analysis

A supplier has established a value analysis coordinating department to help purchasing agents solve value analysis problems.

The vendor is Control Industries, Inc., Inwood, N. Y. It makes precision machine parts and sells to buyers for prime contractors that produce engineering systems and original equipment.

Control's new department is

headed by Paul Moss. Its function: to assist P.A.'s in buying components that are not "overengineered."

Moss and his staff offer their know-how to purchasing agents on both design and analysis problems.

Tire, Tube Shipments Decline in July

Manufacturers' shipments of passenger car tires totaled 8,915,-218 units in July.

This is a 13% decrease from the 10,290,499 tires delivered in the previous month. Reason for the decline, says the Rubber Manufacturers Association, is the normal vacation plant closings.

Truck and bus tire shipments amounted to 1,197,288 units in the same period. This is 2% less than the 1,216,328 tires shipped in the prior month.

Shipments of automotive inner tubes were 3,438,607 units—a 3% decline below the previous month's total of 3,546,889 tubes.



THREE-WIRE CORD SETS are now required by UL, NEC and other codes for grounding many products. But to comply with these requirements, you don't have to sacrifice sales appeal.

Miller Electric co-ordinates style and colors in 3-prong plugs, matching adapters and job-rated strain reliefs molded on vinyl insulated wire. With Miller's imaginative approach to cord set design, your products become more functional, more attractive, more recognizable as yours alone — your trademark can be molded in! And this

design advantage doesn't cost more may even cost less. Extremely efficient production and respect for your schedules save time and money.

Select from the industry's largest line of **stock** vinyl plastic cord set components or Miller's complete, cost-conscious engineering service will design and develop custom cord set components for you.

A look through Miller's **Design Digest** will give you new ideas about cord sets and their value to your products.

Write Dept, P3



Patented FINGER PULL style available



120 Main St., Pawtucket, Rhode Island

For More Information Write No. 335 on Place Mark Card-Page 32

Don't miss the

"PRODUCT GUIDE for OFFICE BUYERS"

in the

OCTOBER 24th

issue of

Purchasing Magazine



YOUR STEEL SERVICE CENTER SERVES YOU IN ALL THESE WAYS



Call your Steel Service Center for the right steel delivered quickly from stock, ready for use. Almost always, they can deliver in a matter of hours. Bethlehem shapes, plates, bars, sheets, tool and alloy steels and other steel products—all top quality—are available through Steel Service Centers from coast to coast.

BETHLEHEM STEEL COMPANY BETHLEHEM, PA.



for strength
... economy
... versatility

BETHLEHEM STEEL



For More Information Write No. 336 on Place Mark Card-Page 32

D PIONEER GLOVES PROMOTE

PRODUCT CARE!

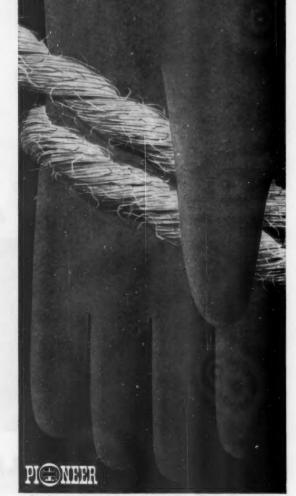
To keep work rolling when the product needs protection from handling, use Ploneer Nimble Fingers ¹⁸ or Sheergrip Gloves. Styles in neoprene, latex or Pylox ¹⁸ bland dexterity with durability in the right degree for your job. Selection is easiest from the Ploneer Industrial Glove Wall Chart (all 59 styles), For your free copy, write...

The Pioneer Rubber Company, 233 Tiffin Road, Willard, Ohio

26 PIONEER GLOVES COMBAT

ABRASION!

All 59 Pioneer Glove styles are job-smart, like Neoprene Coated "Pacemakers" and Pylox Coated "Stanflex"... built to give you better output with more work-hours per glove and more comfort-hours per worker. There are 26 different Pioneer styles especially for abrasion protection on heavy rough materials-handling jobs. Pioneer has the right glove for the job. You can easily select the right Pioneer glove for your job by sending for the Foolproof Pioneer Glove Selector... It's free... and easy!



The Pioneer Rubber Company, 233 Tiffin Road, Willard, Ohio

PIONINA

21 PIONEER GLOVES COMBAT

CHEMICALS!

There's a Pioneer glove to protect workers from chemicals, chemical burns or hand dermatitis. Of the 59 Pioneer Glove styles, 21 are designed to give long service in at least 103 basic oils, greases, acids, solvents and other chemicals. This includes all of the long wearing Milled Neoprene Pioneer styles that bear this recognized Pioneer trademark.





The Pioneer Rubber Company, 233 Tiffin Road, Willard, Ohio

5 PIONEER GLOVES COMBAT FATIGUE,
HEAT COLD!

When the worker calls for hand comfort, you call for one of the 5 Pioneer lined, liquidproof glove styles. They're lined against temperature extremes and coated with neoprene or Pylox Magainst liquid penetration. See these and 54 other glove styles in your free copy of the Pioneer industrial Glove Catalog. For your free copy write...



The Pioneer Rubber Company, 233 Tiffin Road, Willard, Ohio

For More Information Write No. 337 on Place Mark Card-Page 32

FELT

BY FELTERS

PROVIDES DEPENDABLE,
LOW-COST PARTS FOR

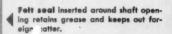
ELECTRIC MOTORS

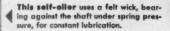
Seals... wicks... lubricators... washers... gaskets — are all vital electric motor parts that benefit from Felt by Felters.

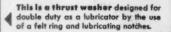
A special Felters' "Engineered Fabrication" processes felt to specific thickness, density, hardness, and resiliency; and provides special characteristics such as absorption, stiffness, water repellency and flameproofing.

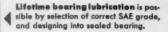
And, new felt and plastic laminates, called PlastiFelts, use synthetics such as Nylon, Teflon, Hycar and rubber to provide an even wider range of application, plus greatly improved performance.

These are some of the many electric motor applications where Felt by Felters offers both a low-cost and high performance material for non-metallic parts.









Feiters" "Engineered Fabrication" makes it possible to specify felt shapes for a complete motor and shaft lubricating system, combining reservoirs, and wicking, and directing oil flow to all required areas.

To get the most out of Felt, send for the Felters Design Book — a complete digest on properties and applications. Write, today.

Ask for FELT from ...

The FELTERS Co.

239 SOUTH STREET
BOSTON 11, MASSACHUSETTS

Pioneer Producers of Felt and Synthetic Non-Woven Fabrics 110-6

For More Information Write No. 338 on Place Mark Card-Page 32



News

August Economic Figures Discouraging

Industrial production in August was slightly below the May-July level, reports the Board of Governors of the Federal Reserve System. At 109 (1957=100), the FRB Index was down one point from the previous month.

Seasonally - adjusted employment in nonfarm establishments dropped slightly, reflecting layoffs in steel and automobile industries. Employment also declined in the service industries, but rose in trade, finance, and government. And unemployment declined less than seasonally to 3.8 million.

Lumber Output Lowest Since '54

National production of lumber totaled 2,694,000,000 board feet in July, the smallest output for that month since 1954 and 16% below the previous month, says the National Lumber Manufacturers Association.

Total shipments were off 16% from the preceding month and new orders received by the mills decreased 10%.

Total unfilled orders were 28% below year-ago levels. Gross mill stocks at the end of the month amounted to 9,902,000,000 board feet

Senate Committee Hits Make-or-Buy Decisions

Make-or-buy policies of Air Force contractors and subcontractors have come under attack by the Senate Small Business Committee.

The committee, headed by Senator John J. Sparkman (D-Ala.), charged that the Convair division of General Dynamics Corporation erred in producing 22 air-conditioning carts for the B-58 group support tactical system. The carts should have been purchased, the committee said.

According to a report made for the committee by the General Accounting Office, Convair, with the

(Please turn to page 274)

REPLEE BE



HOW THE P. A. HELPED THE PROCESS ENGINEER OVER A HURDLE

sodium Handling was the problem! The process engineer (P.E.) was designing a unit for a new process. He'd gone as far as slide rule, stillson wrench and Perry's Handbook would take him, but he wasn't sure of his sodium handling design in one stage.

WHAT THE PURCHASING AGENT DID: Phoned U.S.I. RESULTS:

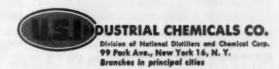
① U.S.I. salesman arranged P.E. visits to U.S.I. sodium plant and to a U.S.I. customer's plant, set up talks with sodium-wise engineers.

P.E. saw sodium equipment in operation, learned answers to key problems.

3 New process worked. Plant start-up was smooth.

4 P.E. bought P.A. cigar.

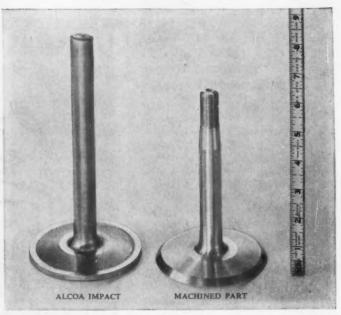
You can give your process engineering department a lift, too, by remembering to call on U.S.I. Your U.S.I. technical service engineer will trouble shoot, make suggestions, spot equipment problems and process snags. This, of course, in addition to rapid, dependable deliveries of U.S.I. sodium as well as chlorine, caustic soda, ethyl alcohol, ether, sulfuric acid, ammonia, and other U.S.I. chemicals.



CHLORINE . CAUSTIC SODA . ETHYL ALCOHOL . ETHER . SODIUM . SULFURIC ACID . AMMONIA



Use of an impact for this missile component provides significant savings in machining time and material cost.

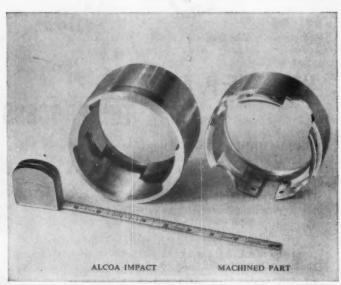


Impact eliminates prohibitive waste of stock previously encountered in machining this air compressor valve from rod stock.

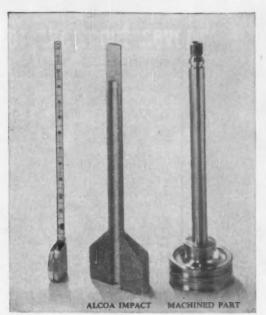
IN IMPACTS...Alcoa



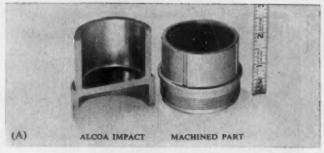
Impact replaces steel forging in which center hole had to be drilled. Cost of finished aluminum part is approximately half that of steel part.



Side-wall steps and grooves in the impact reduce hogging and milling operations in this missile component.



Impact's extremely precise center hole avoids costly deep drilling while impact's outside contour saves high machining chip loss.





(A) Impact incorporates close-tolerance indexing grooves and keys on both ends. Saves precision milling operations and reduces machining time and costs.

(B) Impact reduces machining waste and milling of flats—unavoidable if this sleeve cable connector were machined from heavy wall tubing.

puts the metal where you want it



Impact banishes deep drilling and wasteful machining required when machining this aircraft landing gear plunger from solid stock.

...to save time, money and metal in machining blanks

Every impact on this page is produced quick as a wink. Every one is produced in a strong, heat-treatable alloy with good machining characteristics. Every one incorporates a costsaving design feature—a flange, step, groove, keyway, stem, rib, cavity or deep hole. Every one is made to close tolerances—as close as ± 0.005 in.—without draft. Every one eliminates excessive machining waste and costly operations such as hogging, milling, broaching or deep drilling. Every one is visible proof that in impacts, Alcoa puts the metal where you want it.

The more you know about impacts, the more uses—and savings—you'll find in your own production. See for yourself. Write for *Metal in Motion*, Alcoa's new 34-page brochure on impacts. Aluminum Company of America, 906-K Alcoa Building, Pittsburgh 19, Pa.

Alcoa puts the metal where you want it in castings, forgings, extrusions, screw machine parts and impacts.

ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

Visit the Alcoa Booth (No. 1410) at the National Metals Exposition in Philadelphia, October 17-21.

For More Information Write No. 340 on Place Mark Card—Page 32

ОСТОВЕК 10, 1960



INDUSTRIAL PLANTS like Sylvania Electric

their precision work. Lint problems have must maintain rigid quality standards in been minimized with uniforms of "Dacron".

T-FREE UNIFORMS

start with DACRON° polyester fiber

Lint, often found to be a cause of problems in quality control, is absent with uniforms of "Dacron" polyester fiber. The smooth surface of "Dacron" just can not generate lint. But that isn't all-uniforms of "Dacron" provide builtin economy and lasting good looks as well.

Plant personnel get a vacation from upkeep problems, too-uniforms of "Dacron?" resist wrinkling, endure machine washing and drip drying, need only touch-up ironing.

FOR SPECIAL ADVICE ON UNIFORMS write: Uniform Counseling Service, E. I. du Pont de Nemours & Co. (Inc.), Textile Fibers Dept., Centre Road Building, Wilmington 98, Delaware.



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

PONT SHOW WITH JUNE ALLYSON", THURSDAY HIGHTS, ON CBS.TV. * . DACRON" IS DU PONT'S REGIS TERED TRADEMARK FOR ITS POLYESTER FIBER. DU PONT MAKES THE FIBERS, NOT THE FABRIC OR

For More Information Write No. 341 on Place Mark Card-Page 32

News

(Continued from page 270)

approval of Air Force procurement officers, had taken the contract-valued at \$2.7 millioneven though it had no previous experience in the production of such apparatus. Convair's reasoning in deciding to make instead of buy the equipment "collapses from the weight of subsequent events," the committee report

Convair said that it had to have the equipment in seven months and "at least ten months would be needed to conduct all phases of procurement from an outside source," the report notes. However, the report stated that Convair had taken about 12 months to complete delivery of five prototypes and "was behind schedule all the way." Convair is also weapon system manager of the B-58.

Sparkman Recommendations

The Sparkman committee made the following recommendations after receiving the GAO report:

(1) "Weapon system prime contractors must be educated to the point of view that, in daily make-or-buy situations, their responsibility to the government must precede what they may consider to be the best interests of their company."

(2) "The Assistant Secretary of Defense (should) institute a program to bring . . . to the attention of weapon-system contractors the benefits . . . of subcontracting to . . . qualified small business concerns."

Capital Spending Up \$1.1 Billion in 2nd O

Business outlays for plant and equipment rose \$1.1 billion to \$36.3 billion at a seasonally adjusted annual rate in the second quarter of 1960.

According to the revised data released by the Department of Commerce and the Securities and Exchange Commission, this increase was only half of what was expected earlier. For the third quarter of 1960, expenditures of (Please turn to page 276)

Information about ad on facing

Write No. 342 on Place Mark Card-pg. 32-PURCHASING For the most severe functional application in the home

Superior Stainless



DOES A 365-DAY-A-YEAR JOB Extremes of acid and alkali conditions—nearly constant corrosive action—intense abrasion! These everyday hazards are combatted successfully year after year in the Waste King Universal Food Disposer, thanks to functional elements of Superior Stainless Strip Steel. • Always uniform in performance and fabricating behavior, Superior Stainless is ever-bright, strong, and durable . . . furnished in the precise compositions, tempers and finishes you specify.

• We have much to offer in technical assistance. Use our experience!

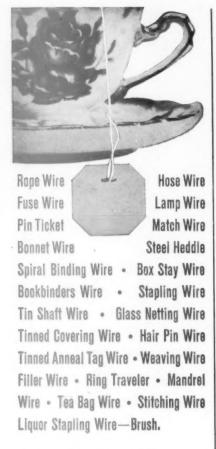
Durable and sanitary stainless is used for Closure Top, Sink Flange, Centrifuge Table, impellers, Cutter Blades, Rivets for Impellers and Cutter Blades.



COPPERWELD STEEL COMPANY CARNEGIE, PENNSYLVANIA

For Export: Copperweld Steel International Company, New York





Specialty Wire... our cup of tea

<u>Problem</u>: Staple the tea bag to the string and the string to the trademark tab. Make the attachment tear-proof and keep stapling machines running smoothly. Meet strict Government regulations envolving cleanliness of wire, metallic content and corrosion factors.

Answer: Call Prentiss. This major tea firm did. Now, "being in hot water" is no problem at all. Write, call or wire: Prentiss Works, Riverside-Alloy Metal Division, H. K. Porter Company, Inc., Holyoke, Mass.

RIVERSIDE-ALLOY METAL DIVISION



H. K. PORTER COMPANY, INC.

PORTER SERVES INDUSTRY with steel, rubber and friction products, asbestos textiles, high voltage electrical equipment, electrical wire and cable, wiring systems, motors, fans, blowers, sneeialty alloys, paints, refractories, tools, forgings and pipe intings, roll formings and stampings, wire rope and strand.

For More Information Write No. 343 on Place Mark Card—Page 32

News

(Continued from page 274)

\$36.9 billion were estimated—compared with last June's prediction of \$37.5 billion.

Preliminary estimates indicate that spending in the current quarter will be unchanged from that in the third quarter.

In the manufacturing sector of the economy, capital expenditures were estimated to fall fractionally in the third quarter. However, it is anticipated that they will edge upward in the fourth quarter, as outlays by durables producers remain steady and those of nondurables producers advance slightly.

Business Failures Increase 15% to 1315

Business failures rose 15% in August to 1315. This was contrary to the usual late summer trend, reports Dun & Bradstreet.

Casualties were higher than in any other August in 27 years. Concerns were failing in August at an annual rate of 59.6 per 10.000.

Dollar liabilities surged to \$97.6 million. The casualties were particularly noticeable among firms with losses of \$100,000 or more.

Manufacturing and service industries were particularly hard hit, as were the lumber, furniture, steel, and machinery industries.

Failures in the Pacific States reached a new high, with California and Oregon topping the list. In seven of the nine geographic regions, business failures ran above August 1959 levels; only the New England and Mountain States held even with year-ago levels.

Steel Industry Hails Purchasing Research

An article on the subject of purchasing research was featured in the September issue of Steelways, a magazine published by the American Iron and Steel Institute...

The article, entitled, "Getting Value to Give Value," includes a

number of examples of purchasing research used by purchasing agents in steel companies. And the importance of research in steel company purchasing departments is emphasized.

The official steel publication observes that purchasing research is a growing field. Reason: steel buyers spend well over a third of their companies' sales dollar each year.

"Purchasing research helps steel industry buyers to assure value," the story says. "It is a major move in the industry's intense drive to maintain steel's competitive position in the nation's metal markets."

The article states that \$1 saved on purchases can be equivalent to the profits on \$6 to \$8 of additional sales.

AF Surplus Disposal Valued at \$2.8 Billion

The Air Force disposed of surplus property originally costing \$2.814 billion during the fiscal year ending last June 30.

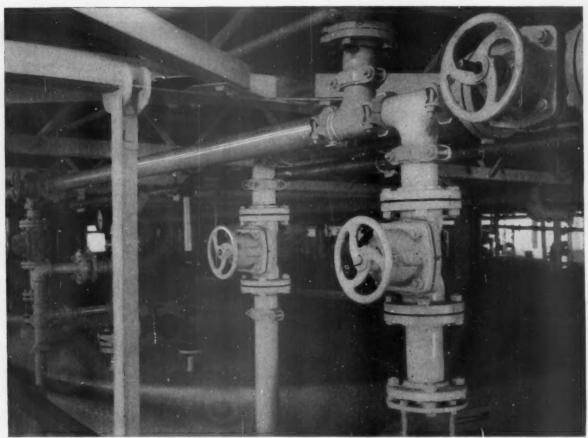
Value of the surplus was \$140 million more than that disposed of in the previous fiscal year, says the Air Material Command. The property ranged from aircraft and spare parts to books and cleaning equipment.

Make Room for the New

Sales Major General Frank A. Bogart, director of supply for AMC: "We must make room in our warehouses for new weapon systems with their modern aircraft and missiles. The tempo of these programs requires a constantly growing amount of obsolete property, including aircraft, be moved out for disposal."

Since government agencies do not use depreciation accounting, the actual value of the property today cannot be determined. But in most cases, says the AMC, actual value "would be but a small fraction of its original cost."

The revenue received from surplus sales was \$27,605,129—or 5.5% of original cost. Also sold were 370,229 tons of scrap and waste material, which brought an additional \$15.876,215.



At new Dewey & Almy latex plant, piping into storage tanks has plastic-lined Grinnell-Saunders Valves with neoprene diaphragms.

At Dewey & Almy plant . . .

Grinnell-Saunders Diaphragm Valves guard against plugging, corrosion, contamination

The new Owensboro, Kentucky plant of Dewey and Almy Chemical Division, W. R. Grace & Co., makes polyvinyl acetate emulsions and butadienestyrene co-polymers for adhesives, paper coatings, emulsion paints and other products.

These co-polymers present several manufacturing problems: build-up of obstructions that plug lines, high viscosity that needs wide-open lines, easy hardening by the air.

Selected to handle this tough job: Grinnell-Saunders Diaphragm Valves. These rugged valves have a diaphragm that lifts high for streamline flow; seals tight for positive closure. Bonnet mechanism is completely isolated from material in the line by the diaphragm to prevent corrosion and contamination.

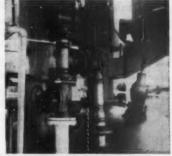
What's more, Grinnell-Saunders Diaphragm Valves give smooth passage of material . . . eliminate trapping of solids, reduce frictional resistance. You can choose from a number of body, lining and diaphragm materials.

Find out how Grinnell-Saunders Diaphragm Valves

can help your installation. Write Grinnell Company, Providence 1, R. I.







Grinnell-Saunders Valves with stainless steel bodies and teflon diaphragms were specified for the reflux lines of this copolymer reactor.

GRINNELL-SAUNDERS DIAPHRAGM VALVES

GRINNELL COMPANY, PROVIDENCE 1, R. I. . BRANCH WAREHOUSES AND DISTRIBUTORS FROM COAST TO COAST PIPE FITTINGS . VALVES . PIPE HANGERS . PREFABRICATED PIPING . UNIT HEATERS . PIPING SPECIALTIES





But RBM "Customer-izes" This Quality Basic Relay

The RBM 98000 Series AC or DC Relay is capably performing such a variety of tasks you might think you were seeing double. Truth is, there are so many different contact forms, ratings and terminal variations... all regular production items at RBM... that the 98000 Series has been "customer-ized" to fulfill almost every conceivable requirement. RBM's vast background of application engineering frequently can serve you with design shortcuts like this... and at low cost when delivered in volume.

BUT THAT IS ONLY PART OF WHAT RBM CAN DO to save your time, your nerves... and your company money. RBM has the development engineering staff and the manufacturing facilities to assist on any control problem. No matter if it is a present problem, or one in the development stage. When the application can best be served by an existing RBM control, we will find the right one. If a special control or complete system is necessary, RBM will engineer and develop it.

OTHER ESSEX ENGINEERED CONTROL COMPONENTS

Wire and Cable

A complete line of appliance wiring material, radio, television and electronic hook-up wire, 200° C high temperature Sil-X wire, automotive wires and cables, and lexible cords.

Essex Industrial Wire Products, Wire and Cable Div. Essex Wire Corp.





Coiled Cords, Cord Sets

Plastic and rubber power supply cords. Terminations of all types (molded plastic and rubber). Complete line of Colled Cords in HPN, Type SP and Types SV, SJ; covering full appliance range.

CORDS, LTD. Wire and Cable Div. Essex Wire Corp. DeKalb, Illinois



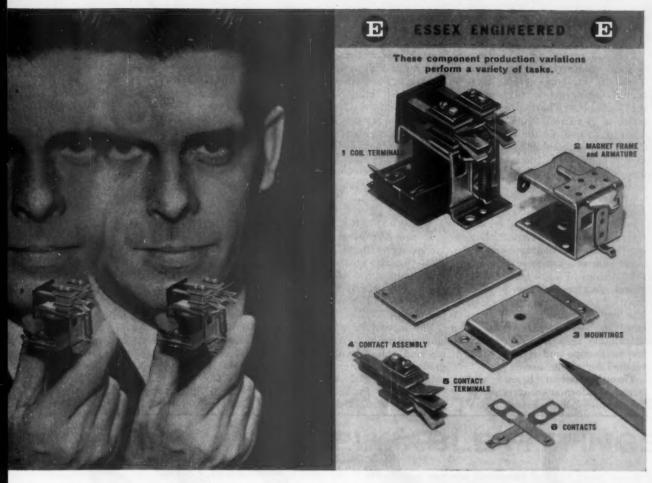


Industrial Plastics

Flexible and rigid vinyl extruded shapes and foam custom designed and volume manufactured to meet your exact needs. Now producing for a variety of industrial applications.

Carolina Industrial Plastics Div. Essex Wire Corp. Mount Airy, North Caro





for Low-Cost Solutions of Many Control Problems!

For engineering help on the most efficient and low cost solution of any control problem, consult your local RBM Application Engineer or send specifications direct.

RBM-ESSEX SALES OFFICES

Atlants, Ga.
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Fort Worth, Texas Hartford, Conn. Hillsdale, Mich. Kansas City, Mo. Louisville, Ky. Los Angeles, Cal. Memphis, Tenn. Milwaukee, Wis. Minneapolis, Minn. Newark, N.J. Omaha, Neb. Orlando, Fla. Phoenix, Ariz. Pittsburgh, Pa. Rochester, N.Y. St. Louis, Mo. San Francisco, Cal. Seattle, Wash. Springfield, Itl. Tulsa, Okla. Windsor, Ont., Can. These are exclusive high quality design features of the RBM 98000: Many are listed by U/L File No. E12139 or No. E22381.

- Varieties of coil terminals available; solder, quick connect or leadwires.
- 2 Simplified magnet frame and armature assembly provides efficient, positive action.
- 3 Variety of mountings available.
- Pressfit contact pile-up eliminates drift; assures contact stability.
- 5 Varieties of contact terminals available; solder, quick connect or leadwires.
- 6 Dependable cross-bar contacts available for low voltage and/or low current circuits. Also power contacts available to 15 amps. on same relay.

Also available is the RBM 97000 Series Relay, providing additional coil power or greater sensitivity.

For further specifications write for Bulletin 1060.



RBM Controls Division

Essex Wire Corporation, Logansport, Indiana

Factories located at North Manchester and Logansport, Indiana



Industry

Philips Electronics and Pharmaceutical Industries Corp., New York, N. Y., (Amex) has completed arrangements to acquire the Columbus Pharmacal Company, a 73-year-old ethical drug manufacturer of Columbus, Ohio. This latest acquisition marks further penetration of the drug field by the diversified electronics, pharmaceutical and chemical manufacturer a 66.7%-owned subsidiary of Consolidated Electronics Industries Corp. Last October, the company merged with Anchor Serum Company, a leading manufacturer of animal vaccines. Through this medium, Philips began a research program for the development of products for human use. The first of these, a measles vaccine, has been subjected to mass inoculation tests in this country and in Europe and is now being readied for public use.

Through patent license and technical information agreements, the company has access to new developments in the drug and pharmaceutical fields originating with N. V. Philips-Duphar of the Netherlands. Philips-Duphar is an activity of Philips Lamps of Eindhoven in the Netherlands, one of the largest industrial groups in Europe with over 100 factories in 32 countries. In last year's merger Philips Electronics and Pharmaceutical Industries Corp. also acquired Philips Roxane, Inc. which does an extensive export-import business in the chemical and pharmaceutical field.

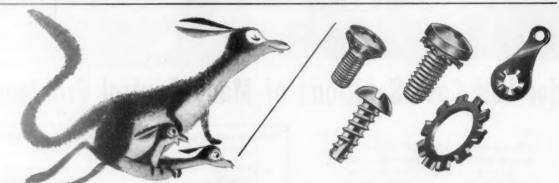
A new \$2 million sales service laboratory will be built by **Du Pont** to assist customers and develop new uses for industrial chemicals made by the company's industrial and biochemicals department.

The laboratory will make possible expansion of customer service and sales development programs, with greater emphasis on existing industrial product lines.

Scheduled for completion at Chestrut Run, Del., late next

year, the two-story building will contain physical testing and analytical laboratories, demonstration areas, offices, and service facilities. It will be the eighth laboratory on the 160-acre site, joining buildings previously constructed for textile fibers, plastics, packaging and industrial films, elastomers and "Freon" products, pigments and electrochemicals products.

Westinghouse Air Brake Co., Pittsburgh, has purchased the Petch Manufacturing Co. and Petch Industries, Inc. of Alpena, Mich., manufacturer of pneumatic and hydraulic cylinders, fluid power control panels and aircraft flight control units. The Petch plants will remain in Alpena, operated by the industrial products division of Westinghouse Air Brake. Charles L. Petch, former president of Petch Manufacturing Co., will continue to be in charge of the operations in Alpena.



Tógetherness

matters with industrial fasteners, too!

Togetherness, industrial style, has a special meaning at Thompson-Bremer because we are one of the few fully integrated manufacturers of Sems, lock washers, thread-cutting screws, terminals and cold-headed specialties. With our engineering services and components manufacturing together under one roof, we can give you faster, more individualized service at competitive prices. We'll bid on your specials requirements, or fill orders for standard items on short notice from the extensive line of EVERLOCK products stocked by your local distributor.

If you buy or specify industrial fasteners, you want whatever your company assembles to go together economically and stay together reliably. Send for catalog and samples or call your EVERLOCK representative.

For More Information Write No. 346 on Place Mark Card-Page 32



Thempsen-Bremer & Co.

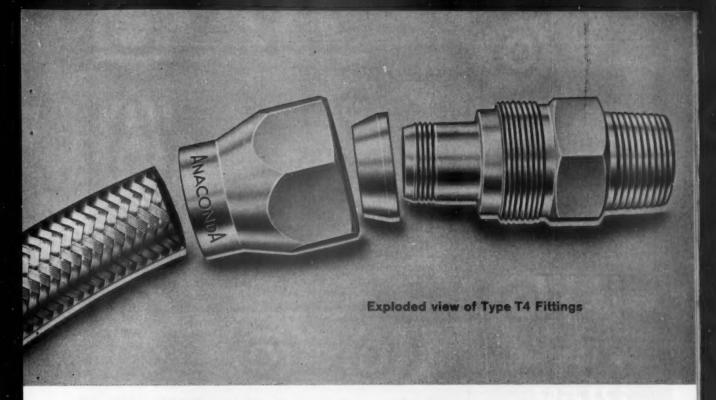
Division of

American Machine

& Foundry Company

Thompson-Bremer & 228 N. LaSalle St., Chic		
Please send me: EVERLOCK EVERLOCK industri	fastener catalogs_ al fasteners and cold-he	samples of
Name	Title	
Company		
Street		

For More Information about ad on facing page Write No. 347 on Place Mark Card—pg. 32→ PURCHASING



Tailor-made Assemblies-

NEW ANACONDA TYPE T4 HOSE OF TEFLON* WITH REUSABLE FITTINGS

Now you can get stainless steel wire-braided hose assemblies of Teflon from your local Anaconda distributor. He can make them up to your exact needs in a matter of minutes, using simple hand tools. It's fast and easy.

Type T4 Hose takes the roughest service. The flexible core is tough virgin Teflon. It's reinforced with stainless steel wire braid for added strength. Reusable fittings for Anaconda Type T4 Hose are designed to withstand high working pressures and temperatures.



It's easy to attach, detach, and reuse Type T4 Fittings. All you need is a vise and a wrench.

*Dupont Trademark

ANACONDA®
METAL HOSE

Where you can use Anaconda Type T4 Hose. Use it for general industrial uses to handle hydraulic and corrosive fluids, hot tar, steam, air, fuel, food, lubricants and gas — within a temperature range of —65° F through 450° F.

Anaconda Type T4 Hose is available in ½-inch through 1¼-inch actual inside diameters. Standard fittings for Type T4 Hose are available in cadmium-plated brass, N. P. T. males. To find out more about how this new assembly can help simplify your maintenance work, fill out the coupon and mail it today.

Anaconda Metal Hose
P. O. Box 791, Waterbury 20, Conn.

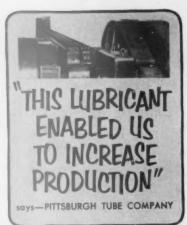
Please send me more details about New Anaconda Type T4 Hose and Type T4 Fittings.

NAME.....

COMPANY.....

STREET

CITY.....STATE.....STATE.



"Our 70,000 pound Draw Bench was designed to operate at a maximum of 80 feet per minute, full load. We decided to increase the drawing speed on lighter tubing to 100 and 104 feet per minute. This overloaded the Speed Reducer, however, causing it to overheat. We tried four different makes of oils without success before trying LUBRIPLATE A.P.G. 90. With LUBRIPLATE, we are able to pull heavier tubing than before at 104 feet per minute without the Reducer overheating."

R. S. Vorous Maintenance Engineer

TYPE OF YOUR MACHINERY, LUBRIPLATE GREASE AND FLUID TYPE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE COSTS.

LUBRIPLATE is available in grease and fluid densities for every purpose . . . LUBRIPLATE H. D. S. . MOTOR OIL meets today's exacting requirements for gasoline and diesel engines.



For nearest LUBRIPLATE distributor see Classified Telephone Directory. Send for free "LUBRIPLATE DATA BOOK" . . a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.



For More Information Write No. 348 on Place Mark Card—Page 32

Industry

A new subsidiary to service machine accounting installations has been announced by UARCO Inc., Chicago. Effective immediately, UARCO Equipment Service Corporation will offer annual service agreements for preventive maintenance and emergency repair of UARCO bursters and other processing machines.

Two separate service plans will be available to UARCO equipment owners:

(1) A complete preventive maintenance plan includes periodic inspections, repairs and parts replacements on a regular schedule.

(2) An agreement which provides emergency service calls only.

Mill-A-Matic Machiming, Inc., Santa Ana, Calif., has opened for business as a job shop based on the Kearney & Trecker numerically controlled Milwaukee-Matic combination machine tool. The company will do small and mediumlot machining for industrial customers.

The 8000-square feet building was designed especially to house



the Milwaukee-Matic, and a second machine foundation is provided for future expansion. The building also houses conventional machine tools to make holding fixtures and maintain tools. Parts processing is controlled by tape prepared by Mill-A-Matic personnel.

In the photograph, tile mosaic on building represents a typical control tape. A new department charged with furnishing up-to-the-minute technical product information to customers, anticipating changing product requirements and furthering the training of its sales force has been established by Jefferson Electric Co., Bellwood, Ill. The company is a manufacturer of electrical transformers, ballasts and other components.

Clarke Floor Machine Co. of Muskegon, Mich., is now a division of Studebaker-Packard Corp. Clarke manufactures floor maintainers, heavy duty wet-dry vacuum cleaners, rug and upholstery shampoo machines, power sweepers, floor sanding machines and edgers. It will operate as autonomous division of Studebaker-Packard. There will be no changes in policies, management or field personnel. Clarke was founded in 1918 as Clarke Sanding Machine Co. and changed its name to Clarke Floor Machine Co. in 1958. It operates two plants in Muskegon and maintains a nationwide network of sales and service branches.

Polymer Industries, Inc., Springdale, Conn., a producer of industrial adhesives and textile specialty polymers, has completed a million-dollar plant expansion. The expansion, which doubles the previous laboratory, production, office and warehousing space, was started in March of 1959. New facilities include, in addition to an all-new general office area, a tank form, a solvent-mixing plant, a polymerization plant, and a 100% increase over former production and laboratory areas.

One of the chief products of the new polymerization plant will be the synthetic giant polymer, polyvinyl acetate, which is used as a basic raw material in the adhesives industry. In addition, this new plant will enable the firm to develop and produce its own specialized polymers designed for specific jobs. These are used for adhesives, coatings, pigment binders, sizing, fabric finishes, and a number of other uses.



TWO-BEARING DESIGN MAKES THESE EMERSON ELECTRIC MOTORS

Ideal for Refrigeration fan applications

Here's a two-bearing motor uniquely suited for refrigeration fan applications. It operates in any position . . . with a minimum of bearing load, vibration and friction. It starts easily at low temperatures because of EMERSON ELECTRIC'S self-oiling, self-aligning bearings that act as soft metal sponges and remove oil from the shaft journal as the motor cools. It lubricates without felt wick or shaft groove and requires less than one-third the oil needed in solid sleeve designs; yet, its oil storage capacity is equivalent to 60% more than most other refrigerator fan motors. The self-aligning feature completely eliminates tight shaft problems. EMERSON ELECTRIC will custom-engineer motors to meet your specific needs. Call us today . . . you'll like our way of doing business!



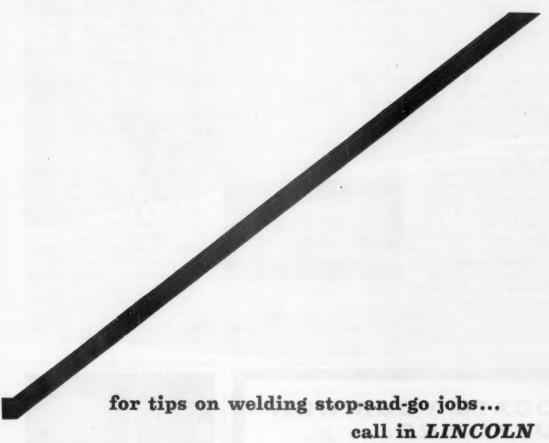


EMERSON ELECTRIC of St. Louis . Since 1890

DEPT M.25, 8100 FLORISSANT . ST. LOUIS 36, MO . . CO 1-1800

For tips on finding the Great Horned Owl... call an ORNITHOLOGIST

(specialist on birds)



(specialists in arc welding)

A KANSAS MANUFACTURER OF MOBILE HOMES doubled the welding speed on his undercarriages by simply changing electrodes—and in addition, saved over \$8000 in the first year.

Manufacturing cost on undercarriage fabrication was prohibitive. Thirteen gauge cross members were welded to twelve gauge channels by welds made in both vertical and flat positions. These short welds on steel having some scale and oil slowed down production.

Finally they called in their LINCOLN Field Engineer. Painstaking tests, made by the LINCOLN man with the welding foreman and plant superintendent, proved LINCOLN's Fleetweld 37 electrodes far better for this application.

RESULTS: lower costs . . . welding speed doubled . . . cleaning time cut in half.

That's why we say it's a good idea to do business with LINCOLN where arc welding is a specialty and cost reduction comes to you as a "plus" at no charge.

THE LINCOLN ELECTRIC COMPANY
Dept. 2840 • Cieveland 17, Ohio



Industry

Anaconda Wire & Cable Co. has announced a realignment of engineering and research activities for communication, electronic and defense products. The newly-organized groups and responsibilities are:

General Engineering—Communications and Electronics: This group has been established to provide guidance in cable design and manufacture, systems engineering, standards, specifications, and transmission characteristics for technical personnel at company plants at Hastings-on-Hudson, N. Y.; Sycamore, Ill.; Orange, Calif.; and at the Redwood City, Calif., plant of the new Anaconda subsidiary, Sequoia Wire & Cable Company.

Hastings Communications Research and Development Center:
An organization to develop special products and conduct electrical measurements to determine transmission data for communications and electronic products has been established at the Anaconda Gen-

eral Research Laboratory, Hastings-on-Hudson, N. Y.

Missile Cable Engineering and Development: Anaconda Defense Electronic Services (ADES), a new technical group for customer assistance, is located at Orange, Calif., operating under the direction of engineering headquarters at Hastings.

Federal Pacific Electric Co., Newark, N. J. has broken ground for a 175,000 sq. ft. building near the O'Hare International Airport



northwest of Chicago. When completed early in 1961, the plant, which is located in a new \$85 million industrial city under develop-

ment at Des Plaines, Ill., is to contain four company operations—Federal Pacific's regional sales office and midwestern redistribution warehouse, Cornell-Dubilier's area sales office and central redistribution warehouse, Economy Fuse manufacturing operations now being conducted in Chicago and Palatine, Ill., and the Economy Screw Corp., which manufactures screws and other fasteners for Federal Pacific plants and other original equipment manufacturers.

Square D Co., manufacturer of electrical distribution and control equipment, has announced the opening of a new assembly plant in Los Angeles. To provide faster, more efficient service to customers in the Pacific Southwest and Hawaii, the new plant includes extensive warehouse and service shop facilities.

This is the ninth in a network of assembly plants which supplement Square D's seven manufacturing plants throughout the country.



ASK THE MAN FROM THE NORTHERN PLAINS

to put you in direct contact with the manufacturers whose wide variety of production is available to you. An accurate plant by plant, machine by machine study has been made and electronically tabulated by Northern Natural Gas Company and other natural gas utilities serving the 5 Northern Plains States. Qualified producers are being referred to industry quickly and without obligation.

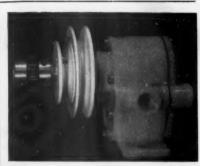
To utilize this service write Randall Klemme, Vice President, Northern Natural Gas Company, Omaha 1, Nebraska, or call Webster 7600.



Serving the Northern Plains
Northern Natural Gas Company
General Offices: Omaha, Nebraska

This Unique Service Is Yours ... Simply For The Asking

For More Information Write No. 351 on Place Mark Card-Page 32



Purchase for Profit!

Specify Chicago Molded

This is a double-sheave for a Planet general purpose gear pump. It's a component that must stand up under plenty of punishment. And it has already proved that it can take it. It's molded of the remarkable new plastic, Delrin, designed specifically to replace discast parts. It provides excellent strength and toughness, resistance to temperature extremes, abrasion resistance and dimensional stability. Further evidence that you always purchase for profit when you specify

CHICAGO MOLDED PRODUCTS CORPORATION 1020-H North Kolmar, Chicago 51, III.



Axton-Cross New England chemical service

Above shows interior truck loading at the Framingham, Mass., plant. This is one of the largest chemical warehouses in New England.

Outside, some of the fleet in the morning lineup for customer deliveries.

"Tomorrow? Easy! If you're in a jam we'll get it there today." That is the standard Axton-Cross response to an order for chemicals.

To make those promises good they have some 50 vehicles, from tractor trailers to station wagons delivering from 3 tank farms and 4 warehouses. Ample stocks of their wide line of chemicals guard against shortages.

Axton-Cross gives service as well as supply. Twelve technically trained representatives cover the territory and are available for consultation. The

laboratory at Shelton, Conn., works on customers' problems when this kind of help is needed.

Customers of Axton-Cross can appreciate the benefits from the prompt service rendered by a good chemical distributor. If you are interested in such service on Blockson and Mathieson chemicals, we will be glad to suggest distributors in your area.

Olin Mathieson





Ammonia • Bicarbonate of Soda • Carbon Dioxide • Caustic Soda • Chlorine • Formaldehyde • Hydrazine and Derivatives • Hypochlorite Products

Methanol • Muriatic Acid • Nitrate of Soda • Nitric Acid • Soda Ash • Sodium Chlorite Products • Sodium Methylate • Sulfur (Processed)

Sulfuric Acid • Urea • Ethylene Oxide • Ethylene Glycols • Polyethylene Glycols • Propylene Oxide • Propylene Glycol

Propylene Dichloride • Ethonolamines • Glycol Ethylene Glycols • Ethylene Oxide • Ethyl



Trisodium Phosphate • Trisodium Phosphate • Chlorinated • Sodium Tripolyphosphate • Tetrasodium Pyrophosphate • Sodium Hexametaphosphate

Monosodium Phosphate • Disodium Phosphate • Sodium Acid Pyrophosphate • Tetrapotassium Pyrophosphate • Sulfuric Acid • Hydrofluoric Acid

Sodium Silicofluoride • Sodium Fluoride • Teox® 120 Surfacfant

7808

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To Your DESIGN SPECIFICATIONS-From the Hand of the Specialist . . .

Bolts · Studs · Cap Screws · Nuts in Alloys · Stainless · Carbon · Bronze



Experienced hands . . . expert hands . . . hands grown competent by the finest of precision work since 1913. These are the hands of our specialists who meet your design and engineering specifica-tions. Special and Standard Erie fasteners to meet the rigors of extreme temperatures, corrosion, tensile, fatigue, impact and shear stresses are serving widely diverse industries the world over. We work to Government and National specs and to special applications as well. Send your specifications to us, confident of the finished precision fasteners you expect.



ERIE BOLT & NUT CO. Erie, Pennsylvania

Representatives in Principal Cities For More Information Write No. 353 on Place Mark Card-Page 32

REDUCE PRODUCTION COSTS

Less Cost Per Foot

Aluminum **Tubing**

C. A. Roberts Co. carries large warehouse stocks of Aluminum Holobar tubing in a wide range of sizes from 1½" to 9½" OD— in wall thicknesses to 1".

No Need to Drill Hole from Bar Stock cylinders, flanges, and printing rolls, etc.

Write for Free Catalog.

Holobar is ideal for making

C.A. ROBERTS CO.

Dept. 0-10 • 2401 25th Avenue • Franklin Park, Illinois

6 Warehouses serving the middlewest CHICAGO . DETROIT . INDIANAPOLIS . ST. LOUIS . TULSA . KANSAS CITY

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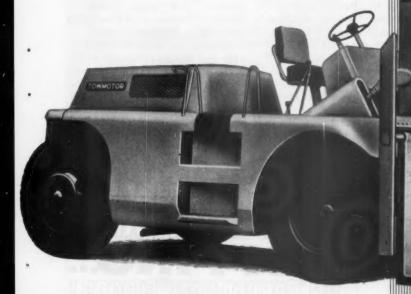


For More Information Write No. 355 on Place Mark Card-Page 32 For More Information about ad on facing page Write No. 356 on Place Mark Card—pg. 32→

Announcing the

BIG NEWS





If you unload, move, stack and load heavy materials be sure to get information on the new big-capacity Towmotor "Monarch" Series Fork Lift Trucks. They're as new . . . all-new . . . as they look!

All eight of the new "Monarch" Series models are built to handle your roughest and toughest jobs . . . yet they are easy to handle . . . and feature—

- · New High-Traction "Low Profile" Styling
- New Extra-Visibility Mast Design
- New Equalized Weight Distribution
- · New "Unitized" Frame and Body Construction
- · New Up-Dated Easy-Operation Features

They all include many more engineering "firsts" described in new Towmotor "Monarch" Series bulletins covering models with 5 to 12 ton load capacities. For specifications, write Gerlinger Carrier Co., Dallas, Oregon.

TOWMOTOR

"MONARCH"

AN ALL-NEW SERIES OF HEAVY DUTY FORK LIFT TRUCKS BY



FORK LIFT TRUCKS, CARRIERS AND TRACTORS SINCE 1919

Gerlinger Carrier Co., Dallas, Oregon, is a subsidiary at Towmotor Corporation

Industry

In a recent expansion and diversification move, Branson Instruments, Inc., Stamford, Conn., has acquired Colin Campbell Company, Inc., Danbury, Conn. Branson also has obtained a halfinterest in Radionics, Inc., Norristown, Pa.

The Danbury firm, now a wholly-owned subsidiary, manufactures transformers, toroids and other electronic devices for defense and industrial applications. Radionics makes gamma radiography thickness gages and flaw detectors, which complement similar ultrasonic-powered test equipment produced by the parent company.

M. & E. Leasing Corp., a new entry in the field of industrial leasing, has been formed as an affiliate of C.I.T. Corp., New York. Both are subsidiaries of C.I.T. Financial Corp., major diversified financing organization headquartered in New York. Thomas E.

Lenihan, president of C.I.T. Corp. will head the newly formed leasing company.

M. & E. Leasing will purchase machine tools and other manufacturing equipment for lease to users. C.I.T. Corp. for many years has specialized in the long-term financing of machine tools and a variety of other durable items for industrial, commercial and pro-

fessional use.

Formation of a new division to specialize in custom machining and finishing of industrial and automotive engine components is announced by Hercules Motors Corp., Canton, Ohio. The market is described as one with a multimillion-dollar potential for Hercules. Quantity manufacturing will start immediately on a severalhundred-thousand-dollar contract for one of the major automotive companies.

The new division complements the company's activities as engine manufacturer and is a step toward production diversification. Initially, it will handle custom machining and engineering operations for outside firms on such engine components as engine heads, transmission housings and other major parts and assemblies. Already available are modern precision types of machine tools along with facilities which allow for a wide adaptation of tooling and volume production.

Metal & Thermit Corp., New York, has acquired the resources and facilities of Orefraction Minerals Inc., Andrews, S. C., which supplies granular and dry milled zircon, for the foundry, refractory, ceramic, and glass industries. Metal & Thermit, with diversified interests in chemicals, metals, alloys, minerals, and welding supplies and equipment, owns or operates mineral mining and ore processing facilities in Australia; Monterrey, Mexico; Carteret, N. J.; and Beaverdam, Va. The new acquisition will enable M&T to offer a complete line of granular zircon material, as mined through all particle sizes down to extremely fine grades.



- · Four sizes—Built-in motors
- · Compact, portable, reliable
- o For O.E.M., plant or lab use

To reduce weight, save space and cut use Gast Integral-Motor-Pump Models! Fitted for vacuum-or as air compressors. For oil-free air, some offered with oil-less construction. Very compact and dependable. Positive displacement.

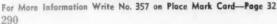
Used as original equipment on instruments, test units, etc. Capacity from 1/2 to 3.8 cfm; to 28" vacuum or to

Model

Write today for Bulletins V-P-356!

Gast Manufacturing Corp., P.O.Box 117-X Benton Harbor, Mich.





N "GARPET-SAFE" FLOORS I

spreads in seconds, works in minutes...cleans, absorbs oil, grease, liquids for weeks! All it takes is one man with a rake or broom and a bag of SOL-SPEEDI-DRI to do the job. Super-absorbent SOL-SPEEDI-DRI granules soak up deep deposits from pores of wood or concrete! Non-burning, mineral SOL-SPEEDI-DRI smothers fire! Inexpensive, reusable until completely saturated. Each Ib. contains over 13

SOL-SPEEDI-DRI®



Minerals & Chemicals Philipp CORPORATION 286 ESSEX TURNPIKE MENLO PARK, NEW JERSEY

For More Information Write No. 358 on Place Mark Card-Page 32 PURCHASING

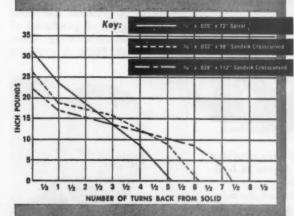
Why SANDVIK

CROSSCURVED SPRINGS STORE MORE POWER



And Deliver It More Evenly

Sandvik crosscurved springs store energy both along their length and across their width. This dual capacity is produced by winding the spring against both its tempered spiral length and against its "crosscurve", a special convex curvature of the strip width.



Crosscurving is an exclusive Sandvik plus which demands superior metal. As shown in the chart, this process makes possible the use of longer, thinner springs and results in longer, steadier power delivery.

For better power output in applications such as timing instruments, carriage returns, starter rewinds. movie cameras and other high performance uses. specify Sandvik crosscurved springs.

Write for free data.

SANDVIK STEEL, INC.

Fair Lawn, New Jersey SWarthmore 7-6200

In New York City Algonquin 5-2200

Cleveland · Detroit Chicago · Los Angeles



For More Information Write No. 359 on Place Mark Card-Page 32 **OCTOBER 10, 1960**



Maximum Security at a Price You Can Afford

Every model in Chicago Lock's extensive line offers sure protection at reasonable cost. Every model is a marvel of precision engineering, compact design and rugged reliability.

They're handsomely styled, too and they operate smoothly under virtually all conditions. No wonder more and more design engineers specify Chicago Locks for an amazing variety of applications.

If your next project calls for a lock, investigate the Chicago line. You'll find a model that's perfect for your purpose and priced to keep costs down.



Chicago Lock's famous ACE line features the exclusive ROUND keyway for maximum security.

Write today for your catalog showing, in detail, the entire Chicago Lock line.

CHICAGO LOCK CO

2052 North Racine Avenue - Chicago 14, Illinois

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291

Purchasing People In The News

(Continued from page 55)

Anne D. Repko has been appointed assistant to the vice president for marketing, with responsibilities in purchasing, for Howe Sound Company, N.Y. In this position Miss Repko will be re-



Anne D. Repko

sponsible for procurement of primary and scrap metals and commodities common to operations in the non-ferrous metals field. Miss Repko was formerly purchasing agent for the Austenal Company division of Howe Sound. She is a member of the board of directors of the New York Purchasing Agents Association and is the first woman to hold the post.

Robert L. Horstman has been appointed purchasing agent for McKinney Manufacturing Com-



R. L. Horstman H. M. Roth

pany, Pittsburgh, Pa: Mr. Horstman succeeds Harry M. Roth who has retired.

Franklin G. Wolfgram has been appointed purchasing agent of Forest Electric Company, Mel-

rose Park, Ill. Mr. Wolfgram was formerly with Chicago Aerial Industries, Inc. as senior buyer for aircraft camera electronic components. Before that he was director of purchases for Land-Air, Inc. and has also held buying positions with Fairbanks Morse & Company and General Motors Corporation.

Walter Follette has been appointed purchasing agent and Harold Groesbeck has been named assistant purchasing agent with the John Bean Division of Food Machinery and Chemical Corp., Lansing, Mich.

Mr. Follette started working in the agricultural sales department in 1947. He stayed in that department until 1951 when he became assistant manager of the fire apparatus department. In 1955, he was transferred to purchasing. He is a 1940 graduate of



W. Follette



H. Groesbeck

Michigan State University where he received a BA degree in business administration.

Mr. Groesbeck joined the company in 1935. In addition to the purchasing department, he has served in both the production and planning departments. A native of Lansing, he graduated from Eastern High School in 1934. Mr. Groesbeck is a member of the Industrial Executives Club of Lansing.

Carl A. Fuller has been named assistant director of purchases for the Dayco Corporation, Dayton, Ohio. He succeeds C. A. Griep who has retired. Mr. Fuller joined the company a year ago as senior buyer for maintenance equipment

and supplies. He has been actively associated with purchasing functions since 1952. Mr. Fuller holds a mechanical engineering degree from the University of Akron.

H. C. Chobanian has been named assistant to the manager of materials of Allis-Chalmers Industries Group, Milwaukee, Wisc. Mr. Chobanian had been office supervisor of the Allis Works purchasing department since 1956 and prior to that was assistant purchasing agent for tractor products.

Burnell & Company, Inc., New Rochelle, N. Y., has named Seymour Hess as purchasing agent. Mr. Hess had been purchasing agent for Nucleonic Corporation of America. He attended Brown University, Providence, R. I.

William A. Garrett has been named director of purchases of the Huck Manufacturing Company, Detroit, Mich. A graduate



William A. Garrett

of Baldwin-Wallace College with a degree in business administration, Mr. Garrett's background includes six years in merchandising and sales and seven years in purchasing. Prior to joining Huck, he had been a senior buyer with Thompson Ramo Wooldridge in Cleveland.

More Information about ad on facing
Write No. 363 on Place Mark Card—pg. 32

PURCHASING



100 of the leading gasket fabricators in the business

display this emblem. Your gasket requirements—large or small—will get fast, expert service from Armstrong Approved Fabricators. One of these fabricators is near you . . . and he's part of a nationwide network of suppliers whose main business is gaskets, die-cut to your specifications. We think you'll find them good people with whom to do business. Armstrong Cork Company, Lancaster, Pennsylvania.

Purchasing People

Francis X. Murray has been appointed superintendent of purchasing of Railway Express N.Y. Agency, Mr. Murray joined the company as a buyer in 1952. He attended Fordham University and completed special courses in purchasing management at the University of Wisconsin and the American Management Association School. He is a member of the New York Purchasing Agents Association.

Paul Boffa has been appointed a buyer at the Milwaukee office of Cutler-Hammer, Inc. Mr. Boffa has been a buyer at the Lincoln, Ill. plant since 1958. Before that he was a member of the purchasing staff in New York when Cutler-Hammer operated a plant there. He has been with the firm since 1925. Succeeding Mr. Boffa as buyer at the Lincoln plant is K. M. Jones, an analyst in the Lincoln purchasing department.

Allen D. Helveston, Jr., has been made buyer for Keasbey & Mattison Company, Ambler, Pa.



Allen D. Helveston, Jr.

Mr. Helveston will purchase maintenance and repair items and office supplies.

New York Central System, New York, N. Y. has made the following appointments in its purchasing department: M. P. Richards, director of purchases. H. L. Riser, purchasing agent—new equipment and surplus property sales, and

W. J. Haggerty, purchasing agent —maintenance of way materials and equipment.

Carl V. Schroeder became purchasing agent for Clayton Mark & Company, Evanston, Ill. Mr. Schroeder has been director of



Carl V. Schroeder

purchasing of brass products for American Standard Company, Cincinnati, for the last seven years. Previously he was with the Crosley Division of Avco Mfg. Corporation.

FREE

to metalworking management!

NEW

16-page illustrated booklet

Vapor-from-paper STOPS RUST

Now, you can "mothball" your metal parts or products as easily as your wife protects her woolens. This new booklet tells how Ludlow VPI® Wrap cuts costs in shipping and storage. Read how other companies have saved by



modernizing their preservation methods. It's FREE! Ludlow Papers, Needham Heights, Mass. Dept. 166.



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A B MURRAY

THE *KEY*TO BETTER TUBING

SERVICE Depends on the reliability and integrity of your distributor. This well known fact is often overlooked or neglected in the constant search for the "better buy" in attempting to meet a competitive market. Over the years MURRAY has always maintained a fair pricing practice. We feel that this pricing policy along with fast dependable service, qualified personnel, and a tremendous range of tubing and pipe stock is the key to better tubing service. Next time won't you call MURRAY? Others have for over 115 years.

ESTABLISHED 1845

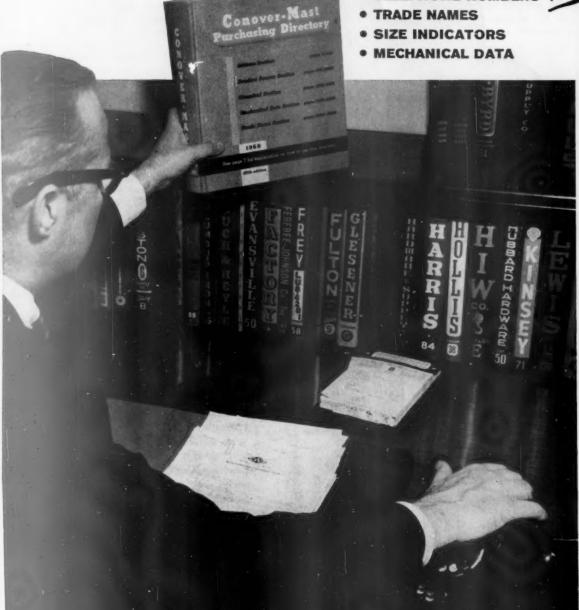
A B MURRAY CO INC

ELIZABETH, N. J. BRISTOL, PA. McKEESPORT, PA.

ONE handy directory for

- PRODUCT SOURCES
- ADDRESSES
- TELEPHONE NUMBERS New





Conover-Mast Purchasing Directory can be kept right at your desk

Because C-MPD is designed for industrial buying it is compact...yet complete. And now you can use it for checking telephone numbers of companies that sell to industry. Never before has so much information been put into one volume for industrial Purchasing Agents.

Conover-Mast Purchasing Directory

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MUrray Hill 9-3250



SAVED ON RUBBER MOLDS & DIES

specifying Atlantic India... really adds up!

Yes, Atlantic's collection of rubber molds and dies often supplies just the one you need. You save the expense of making new molds and dies, and at the same time deal with one of the oldest and most reliable manufacturers

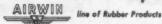
of rubber products.



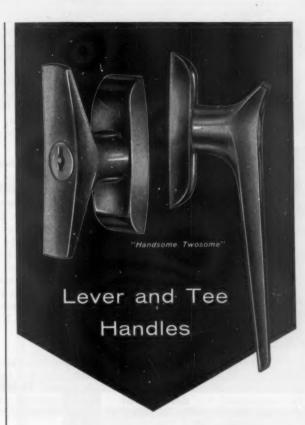
Your special problems are in good hands at Atlantic India, too! Our engineers and laboratory technicians are well qualified to help you develop special compounds, molds, and manufacturing economies for your long production runs.

Join our mailing list. If you or others in your company would like to receive our literature or catalog 52, write today.

Atlantic India Rubber Wks., Inc.



573 West Polk St., Chicago 7, Illinois For More Information Write No. 366 on Place Mark Card-Page 32 **OCTOBER 10, 1960**



IN SMART NEW DESIGNS

CORBIN, of course - modern as tomorrow. Here's the latest word in Lever and Tee Handle design.

All Handles are pressure-cast. Lustrous satin-chrome finish sets the standard. Other finishes available on special order.

For a complete description of these new designs in Lever and Tee Handles, just send for corbin's newly published Lever and Tee Handle Folder.



CORBIN CABINET LOCK DIVISION

For More Information Write No. 367 on Place Mark Card-Page 32

297

Purchasing People

Appointment of William R. Patton as director of purchasing and supply was announced by International Telephone and Telegraph Corporation, New York, N. Y. Mr. Patton will report to the vice



William R. Patton

president-manufacturing, and will be responsible for development and administration of corporate purchasing policies and systemwide contracts for common raw materials. Previously director of purchases for Sylvania Electric Products, Mr. Patton was also foreign operations manager for Argus Cameras. He is a graduate of the University of Rochester, with a B.S. in physics.

Frank D. Vanacore has been named purchasing agent for the Warren, N. J. plant of the Bridgeport Brass Company. Mr. Vanacore joined the Hunter-Douglas Division of the company in 1948 as assistant to the controller. He served successively as east coast purchasing agent for Hunter-Douglas; purchasing agent for Bridgeport Brass, Hunter-Douglas division; and purchasing agent for the Felmington, N. J. plant since 1958.

Cutter Laboratories, Berkeley, Calif. has made the following appointments: Thomas J. Teare became president of a Cutter associate company, Plasbond Corporation, Santa Cruz, Calif. Mr. Teare had been purchasing agent for Cutter. He is now succeeded by Jack D. Ryan.





Jack D. Ryan

. Ryan T. J. Teare

Mr. Teare was named material supervisor for the product planning department of Cutter in 1951. He next moved to the purchasing department as buyer, then assistant purchasing agent and in 1958, he was appointed to head the purchasing department. He is a graduate of the University of California where he received a BS degree in business administration. He also attended Brooklyn Polytechnic Institute in New York, majoring in electrical engineering.

Mr. Ryan joined Cutter two years ago as a chemical buyer in the purchasing department. He is a graduate of the University of California where he holds both a BS and a MBA degree. Both men are members of the Purchasing Agents Association of Northern California.

George L. Miller has been named purchasing agent for Firth Sterling Inc., Pittsburgh, Pa. He succeeds Harry K. Stern who has retired after 45 years of service with the company. Mr. Miller joined the company 35 years ago. Prior to this appointment he had been assistant purchasing agent.

Don't Miss the
"PRODUCT GUIDE FOR
OFFICE BUYERS"
In the October 24th
Issue of
Purchasing Magazine.

Solid Platinum Anode Performance at 1/10th the Cost

PLATANIUM ANODES

PLATANIUM ANODES, made from titanium mesh coated with a uniform thickness of platinum by the PLATANEX* Plating Process, are equal functionally to solid platinum anodes yet cost less than 1/10th as much.

Thanks to a unique diamond configuration design, PLATANIUM ANODES give maximum anode area while cutting down over-all size 50% or more.

PLATANIUM ANODES are recommended for a wide range of electrolytic operations—from electroplating to refining or chemical processing—wherever insoluble anodes are indicated.

We're in full production and can offer immediate shipment of PLA-TANIUM ANODES in practically any size or quantity required.

Our technical bulletin PLT-1 gives details and price information.

*Trademark, patent applied for.



SEL-REX CORPORATION

The world's largest selling precious metal electroplating processes

For More Information Write No. 364 on Place Mark Card—Page 32

For More Information about ad on facing page Write No. 370 on Place Mark Card—Page 32→ PURCHASING

Numatic Towels...

This handle cuts out washroom complaints...

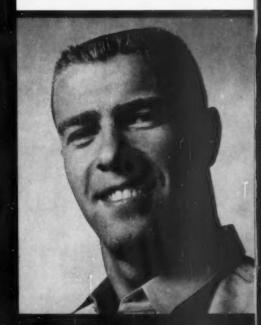
while it's cutting costs

"Numatic really cuts down on washroom waste. The hand crank prevents thoughtless grabbing of unnecessary towels and helps to lower maintenance costs."





- Numatic is soft and white . . but strong, too! It doesn't shred or leave lint on my clothes. And I like the way it lets me crank out as little or as much toweling as I actually need."
- A detailed analysis of your washroom costs will show you how much money Numatic can save you. For samples and complete information, call your nearby Crown Zellerbach distributor, or write us at 485 Lexington Avenue, New York. Numatic ®



"Numatic lets me do more work, because I don't need to refill the dispenser as often. Each roll has an average of 667 towels! That's big capacity!"



Value Analysis: Newest Supplier Service

(Continued from page 99)

great deal of punishment. The purchasing agent had been buying a welded fabrication, but had encountered many fatigue and impact failures.

Here's what the foundry's special "value" department did for the P.A.:

(1) It coated the weldment with Stresscoat-a lacquer which dries to a brittle finish. This was done in a room with controlled temperature and humidity.

(2) After drying overnight, the weldment was bolted to a test fixture and a load (No. 1) was applied in the same direction as that encountered previously (see Fig. 1). A pattern of hairline cracks appeared at point A, indicating that the metal underneath was stretching slightly as the weight load reached 2000 lbs. The cracks did not spread as more weight was added, suggesting that the strain area was concentrated at point A.

(3) Directional load No. 2 was

applied and a crack pattern began to appear at 1925 lbs. In this case, however, the cracks spread as more weight was applied, indicating a distribution of the stress throughout that area of the weldment. This was verified when the stock was deformed at that point.

(4) The crack patterns were then analyzed. The areas where the cracks were tightly concen-



Figure 1

trated were those where the greatest distortion had taken place and were, therefore, the weakest parts in terms of service

(5) With this background, the vendor sketched his casting design, dispersing the strain at critical points, "beefing up" highly stressed areas, and eliminating excess metal. This dispersion of the strain meant a higher yield strength, better serviceability.

(6) The resulting casting was then tested under the same circumstances to verify the engineering findings.

The supplier's stress testing and product engineering facilities showed the P.A. how he could save 59% in his part cost, increase tensile strength, and reduce rough weight by 30%. He was also able to eliminate the undesirable stress concentration at the vulnerable point and also make a better looking finished part.

By establishing a department that concentrates on cooperating with P.A.'s on value analysis projects. Belle City became more valuable as a supplier.

Let SUN SHIP solve machine problem

When you need machine work or specially built machinery of any kind, you'll find Sun Ship qualified to do the job exactly to your specifications. We have machine tools of every size, and the facilities and skills born of long experience.

When you have a machining problem, write or phone

SALES ENGINEERING DEPARTMENT

SHIPBUILDING & DRY DOCK COMPANY CHESTER, PA.

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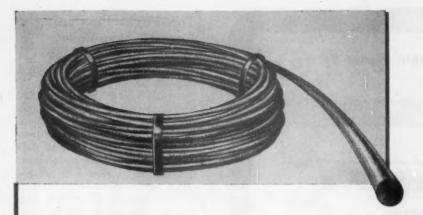
STANDARD SOLENOID VALVES CUSTOM FLEXIBILITY

Skinner's V5, X5 series of two-way and three-way solenoid valves has earned the description—"The Universal Line." With more than 100,000 variations possible, V5, X5 valves are available for every conceivable application. And top quality is emphasized. Bubbletight sealing throughout, stainless steel body, plunger and sleeve assembly, precision machining, unique welding techniques, specially designed and developed machinery and manufacturing methods are all used by Skinner to produce the best valves made. These valves are small, yet handle operating pressures as high as 3000 psi. They accommodate all media that are compatible with stainless steel. No other solenoid valves offer so many optional features.

For complete information contact a Skinner Representative listed in the Yellow Pages, or write us at Dep't. 600.



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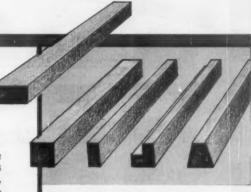
For Your Special Requirements Use

EATON-RELIANCE COLD FINISHED STEELS

Eaton-Reliance can furnish shapes in the range of .020" x .020" to ½" x ½" x ½"—rounds up through ½" (coils or bars)—cold rolled, cold drawn special shapes—keystone—centerless ground, finished to your specifications. Produced by the most modern machinery under the most exacting quality control procedures, you can be assured Eaton-Reliance special steels will meet your requirements.

All steel finishing is done in our own mill by experienced craftsmen who draw and roll steel for ball and roller bearings—rings—springs—keys—pins and cold heading. Countless sections are available including round, square, flat, rectangular, step section, keystone and hex.

Eaton-Reliance also cold finishes several non-ferrous metals in addition to carbon, stainless and alloy steels.



Write for our 8-page catalog containing information about Eaton-Reliance cold finished steels and non-ferrous metals. No obligation.





- RELIANCE DIVISION

MANUFACTURING COMPANY
513 CHARLES AVENUE • MASSILLON, OHIO

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For More Information Write No. 371 on Place Mark Card-Page 32



Engineers' Wrenches, 32 sizes, 15° offset, single head, open end. Fed. Spec. GGG-W-636a, Type V. • Engineers' Wrenches, 40 sizes, 15° offset, double head, open end. Fed. Spec. GGG-W-636a, Type IV. • Pin Spanners, 15 sizes, single pin. Fed. Spec. GGG-W-665, Type III. • Adjustable Face Spanners, 3 sizes. Fed. Spec. GGG-W-665, Type III, Class 1. • Adjustable Hook Spanners, 4 sizes. Fed. Spec. GGG-W-665, Type I, Class 1. • Construction Wrenches, 15 sizes, 15° offset, single head, tapered alignment end. • Structural Wrenches, 23 sizes, straight openings with offset heads, tapered aligning ends. Fed. Spec. GGG-W-636a, Type IX, Class 1.

132 New Industrial Wrenches Now In Proto Line

The most needed sizes and types of industrial wrenches and spanners are now included in the Proto Industrial Line. These new tools are all drop forged, in high quality carbon steel, heat treated and broached or milled to highest industry standards.

When you need industrial wrenches to build, maintain, or ship with your equipment, call your Proto Distributor. He and your local Proto representative are ready to help you with your tool requirements—for production bottlenecks, OEM sets, or special tools made to your specifications. (In many cases, your special tool needs can be filled "off-the-shelf" from Proto's Contract Sales Department—

where thousands of special tools with special shapes and opening combinations are made for industry and the Government every year.)



Division of Pendleton Tool Industries, Inc.

2215 Souta Fe Ave., Los Angeles 54, Calif. . \$15 Atlen St., Junestown, N. Y. . 1715 Oxford E., London, Ont., Can

Top Flight Purchasing Earns Recognition

(Continued from page 78)

gate the desirability of placing it in stock.

Requisitions for non-stocked items are identified with the job number and the job destination. This simple device enables purchasing to save thousand of dollars on transportation costs alone. If a purchased item does not require any in-plant work, it can be sent directly to the job site, thereby eliminating double shipping charges. Some parts, in fact, can be bought from sources near the job.

Certain types of subcontracts are particularly well suited for field buying. Laminated plastic tops are good examples. They have to be manufactured to individual job specifications and frequently have to be fitted at the site. By having them made near the job, Stanjones has not only eliminated the transporation cost entirely, but avoids many construction problems.

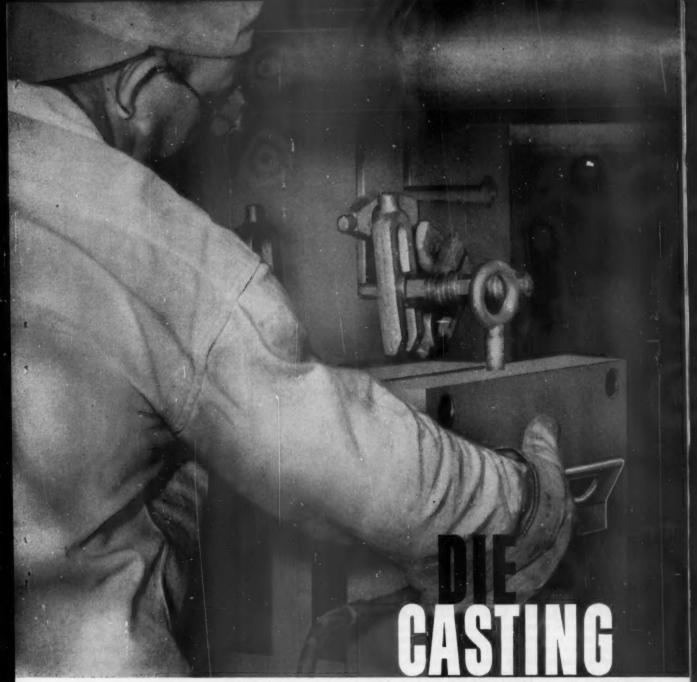
They Don't Pay More

"We have installations throughout the country," he relates. "Shipping these large, complicated tops became a big problem as our work increased. So I asked the manufacturers for the names of prime fabricators in each area. Now I have the tops made in the field, close to the jobs. They are shipped direct to the site by the fabricator, usually in his own truck. We save freight and avoid damage."

Does this long-distance buying lead to higher prices? Not if you can estimate costs reasonably accurately. Stanjones cites a West Coast piping and ductwork contract as an example. A low bid was submitted by a fabricator rated as competent by Metalab's service department. The amount was \$11,000. After checking the blueprints and doing some estimating, Stanjones decided the figure was high. He asked the contractor to come in with a breakdown, item by item, and foot by foot. By the time they had reviewed the entire job, the price was down to \$7,000.

(Please turn to page 304)

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PURCHASING



Die casting an important product - control panel component - for the electronic data processing industry.



Designing, Engineering, Die Making and Casting are Southern Die Casting services that help you produce a better product at lower cost. Modern casting techniques — including the Vibrocast process — and specialized, high-speed equipment provide you with

stronger, more precise parts cast in non-ferrous alloys. From metallurgy to machining . . . from tooling to technology, there's a specialist with years of experience to serve you. For fast, dependable service for your die casting needs, write today!

SOUTHERN DIE CASTING & ENGINEERING

206 Albertson Road / High Point, North Carolina Sales territories are available for representation. Write to John A. Weber, Vice-President.



The Hallmark of Southern Die Casting and Engineering, a mark of quality,



LINDBERG ENGINEERING USES 102 WINSMITH SPEED REDUCERS

on their Roller Hearth Furnaces Lindberg Roller Hearth Solution Treating Furnace, showing some of the 101 Winsmith Model 2CB Reducers which drive the rolls. An additional Model 7CT is also installed. The heating chamber of this furnace is 100 feet long with 40 feet of quench chamber.



LINDBERG ENGINEERING COMPANY of Chicago is a leading manufacturer of heat treating furnaces. When they designed this one to handle 4,000 lbs. of aluminum extrusions per hour, specifications called for 101 speed reducers to drive the rollers. They selected Winsmith for compact size, rating and their record of past performance. Lindberg is a long-time Winsmith customer. They describe the relationship this way..."We have used Winsmith Reducers for many years and have found their reliability and ruggedness ideal for use with our heat treating furnaces."

Lindberg Engineering is another one of the leading American manufacturers who specify Winsmith Speed Reducers for most applications from 1/100 to 85 hp.—in ratios from 1.1:1 through 50,000:1.

SPEED REDUCERS

WRITE TODAY for complete selection information and engineering data. You'll see for yourself why it pays to standardize on Winsmith.

WINSMITH, INC.

18 Sixth Street, Springville, (Erie County), N. Y.

For More Information Write No. 374 on Place Mark Card-Page 32

Top Flight Purchasing Earns Recognition

(Continued from page 302)

Field buying, however, isn't the only way purchasing cuts shipping costs. It also cashes in on an unusual feature of Metalab's business-it's own trucking system. The company delivers its products by its own trailer trucks almost anywhere. Of course, rail is more economical for the long hauls to the West Coast, but company trucks go as far as Milwaukee and Chicago regularly. On the return trip they pick up purchased materials. Heavy materials such as stone tops from New Hampshire, and steel sheets, glass, and sinks from the Middle West, go in company trucks regularly.

The procedure is simple. Purchasing asks vendors to notify it at least three days in advance when a shipment will be ready. It then alerts Metalab's dispatcher who schedules the pick-up for a truck in the area. Even if they do not make a full truckload, materials come directly to the plant without additional handling or transshipment.

Stanjones' department is a small one and he aims to keep it that way in order to hold operating costs down. Simple, straightforward procedures help him do this. He designed requisition and purchase order forms, for instance, so that information can be easily transferred from one to the other. The same information appears on each, and is identified in the same

At the bottom of the requisition is space for a simple quota-

(Please turn to page 306)



"I've been coming here for seventeen years. Nice reliable outfit to do business with."



When towels come one at a time they all get used



NEW Steiner Serva-Matic dispenser delivers one unfolded paper towel at a time. No buttons, cranks, levers or tear off regulard. A few seconds will elapse before the next towel comes out of this Steiner automatic dispenser. Means the first towel will be used before the second can be taken. When this happens every time someone dries his hands you can see the result: Fewer towels are used . . . waste is reduced . . . towel costs go down (as much as 30%). All Steiner cabinets have an adjustable control you can set to dispense towels at the rate you want . . . at the best rate to keep washroom traffic moving and to keep employees and customers satisfied. For details write . . .



STEINER COMPANY

Dept. 60-5, 740 Rush Street

Chicago 11, Illinois

For More Information Write No. 375 on Place Mark Card-Page 32

Top Flight Purchasing Earns Recognition

(Continued from page 304)

tion analysis, with room for data from three vendors. Although it doesn't permit filling in all the details, it gives a birds eye view of the prices, shipments and terms quoted.

The design of the purchase order form saves the receiving department a lot of work. Five copies go to receiving as a unit. Receiving does not have to copy any order information but only fills in the quantity and date of receipt. The form has space for four partial shipments. When the order is complete, receiving distributes the copies to the designated departments.

Metalab does not use any complicated conditions on its order form. On the acknowledgement copy, however, it asks the vendor to indicate any price different from that typed on the order. If the vendor does not correct the price, purchasing is usually in a position to hold him to it.

How to Sell Supplier Salesmen

(Continued from page 79)

Result was another run of orders, stemming directly from vendor relations. In fact, National-Standard now gets about half this customer's business in flat stainless wire.

Because he must spend so much time traveling and waiting to see customers, the typical salesman is fortunate if he can call on six customers per day - and many salesmen aren't able to do this well. The buyer, on the other hand, may see a dozen salesmen on a busy day-and many buyers easily beat this average. Because purchasing people see so many more outsiders than a company's own salesman can see, they can be extremely useful in promoting the company's products and generating good will.

Supplier salesmen are extremely responsive when a sincere effort is made to exchange ideas, Mogle reports. Communication works two-ways, of course. National Standard purchasing makes

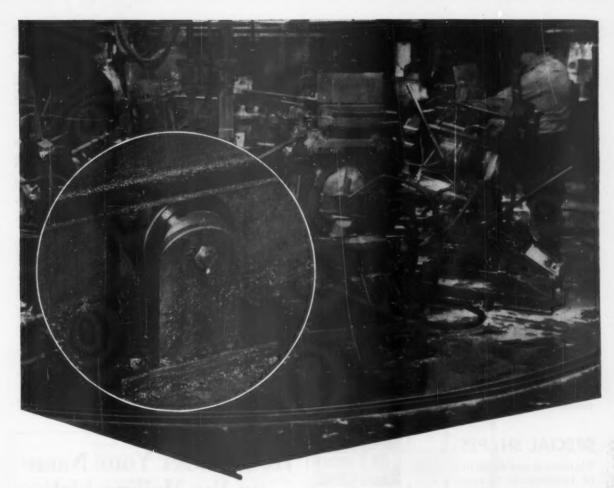
a genuine effort to help suppliers and suppliers reciprocate with enthusiasm. For example, one supplier salesman recently helped National Standard improve the packaging of one of its products.

Communication between National Standard and its suppliers is stimulated by frequent visits by purchasing personnel to supplier plants. National Standard buyers get acquainted with supplier production and quality control personnel. They explain their standards and try to resolve all problems. When expediting, purchasing can then call production heads directly to secure information and cooperation without delay. You can be certain that the phone conversation is on a firstname basis.

Friendliness Pays Off

Does friendliness pay? Says Mogle, "We know we are getting above-average performance from our vendors on delivery, quality and service. This would not be the case were National-Standard just another order number on supplier schedules."





Bearings, Inc. turned this turntable from a costly maintenance problem into a smooth, trouble-free operation!

Our customer, an aluminum foundry, designed and built this system for continuous and automatic pouring of permanent mold castings. The turntable is approximately 20 feet in diameter. Supporting the table, which weighs several tons, were 20 large, double-row bearings. The life of these bearings was only a few weeks and their cost, plus downtime, was becoming increasingly expensive.

Our bearing engineers were asked for a solution and, after an investigation, recommended a camroll bearing. Now, after many months of operation, all turntables in the plant are equipped with the bearings we recommended and there has not been a bearing failure in that period!

If you have a problem involving bearings, call the Bearings, Inc. branch nearest you for expert help. We are the authorized distributor for all the bearings we sell -your guarantee that the bearings we deliver will be of the latest manufacture and right for your application!

Providing bearing service

in the North > DELAWARE: Wilmington . ILLINOIS: Neimon Bearings Co., E. St. Lauis . INDIANA: Fi. Wayns . Indianapolis . Muncis . Terra Houte . MARYLAND: Bultimore . MISSOURI: Neiman Bearings Co., St. Louis . NEW JERSEY: Comdon . Nework . NEW YORK: Balanrol Corp., Buffalo - Niagara Falls - OHIO: Akron - Canton - Cincinnati - Clavoland - Columbus - Dayton - Elyria - Hamilton -Lima » Lockland » Mansfield » Painasvilla » Tolado » Yaungstown » Zanesvilla » PENNSYLVANIA: Eria » Johnstown » Philadelphia » Pittsburgh » Yark 💌 WEST VIRGINIA: Charleston . Huntington . Parkersburg . Wheeling

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for

Custom Plastics Extrusions

consult



TUBING

Special shapes or standard, rigid or flexible, in diameters from ½" to 16". Our engineers have developed advanced techniques that can save time and money on the right shape for your specific needs.



We extrude any shape in a variety of formulations to meet a wide range of design and performance requirements. Our complete tool and die shop is staffed with skilled technicians. We maintain a library of more than 400 section dies, one of which may fit your product design.



FABRICATED PARTS

We shape, flatten, curve, swedge, drill and perform other fabricating operations to make plastic parts ready for your production lines. Close tolerance, absolute uniformity, dimensional stability and high-gloss finish are standard production requirements at



Write for Bulletin 180 - and for prompt quotation send us your prints



YARDLEY PLASTICS CO.

140-144 PARSONS AVE., COLUMBUS 15, OHIO For More Information Write No. 378 on Place Mark Card-Page 32 STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCU-LATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MAR. 3, 1933 Of Purchasing, published bi-weekly at Orange, Conn., for October 10, 1960. State of New York

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Ray Richards, who, having been duly sworn according to law, deposes and says that he is the Publisher of the magazine "Purchasing" and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537 Postal Laws and Regulations printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:
Ray Richards, Vice-President and Publisher, 205 East 42nd Street New York City 17; Paul Farrell, Editor, 205 East 42nd Street, New York City 17.

2. That the owner is: C-M Business Publications, Inc., 205 East 42nd Street, New York City 17; Conover-Mast Publications, Inc., 205 East 42nd Street, New York City 17; Estate of Harvey Conover, Sr., 205 East 42nd Street, New York City 17; B, P. Mast, Sr., 205 East 42nd Street, New York 17.

3. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None

owning or holding 1 per cent or more of total amount or nonus, most gages, or other securities are: None

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholders or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication

in the said stock, bonds or other securities than as so stated by aim.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is 15,665.

RAY RICHARDS
(Signature of Publisher)

Sworn to and subscribed before me this 16th day of September, 1959.

LEO F. HAGGERTY

Notary Public (My commission expires March 30, 1961.)

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Rollpin won't mushroom or telescope

There are no installation or removal problems with Rollpins. Because of their column strength they can be readily driven with a hammer, removed with a punch without bending or collapsing. Of course production line tooling such as an arbor press, a pneumatic hammer . . . even a hand riveter . . . is ideal for Rollpin insertion.

Rollpin won't damage or enlarge hole

With smoothly chamfered ends providing an easy lead-in, Rollpin is compressed into complete conformity with the shape of the hole. The exclusive, v-shaped, coped corner design eliminates possibility of damage to the hole walls. They prevent any possible scoring action as the pin is driven and insures uniform insertion and removal characteristics. The benefit to you: the same pin can be reused in the same hole.



ONLY ROLLPIN OVERCOMES ALL THESE FASTENING PROBLEMS!

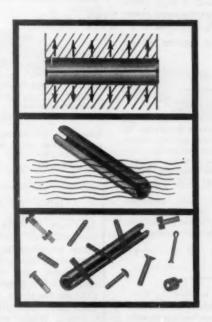
Rollpin exerts EVEN pressure

In some fasteners, only a portion of the fastener shaft does the actual holding. Rollpin, however, exerts a uniform pressure around the entire inside surface of the hole—giving you maximum holding power and superior resistance to vibration.

Split tubular construction assures uniformity of heat treatment that is difficult to obtain with spiral types of pins; there is an even plating "throw" inside the pin as well as outside for superior corrosion protection.

ONE TYPE of Rollpin does EVERY TYPE of job

Versatile Rollpins will replace at least 12 different types of fasteners. Every Rollpin can be hopper-fed, can be installed with a single operation. They are available, from stock, in a wide range of lengths and in diameters from 1/16" to 1/2". Manufactured from carbon or corrosion resistant steels and beryllium copper.





ELASTIC STOP NUT CORPORATION OF AMERICA WHERE CAN YOU USE THIS VERSATILE FASTENER? MAIL COUPON FOR SAMPLES:

- Please send me ROLLPIN samples
- Please send me ROLLPIN
 bulletin

Street.......Zone__State____

For More Information Write No. 379 on Place Mark Card-Page 32

Employment Service

Experience: Over 15 years combined engineering and purchasing experience with nationally known multi-million dollar mfg. companies. Last three years: manager of purchases of subsidiary of international firm. Prior experience: 5 years purchasing agent for company with consumer goods and defense products line; 3 years layout draftsman, design and project engineer associated with mechanical components and assemblies.

Education: B.S.E. and M.B.A.; A.M.A. and company sponsored management courses.

Will relocate. Write: Box 277

Experience: Six years with manufacturer of large machine tools includes 4 years as purchasing agent. Purchased steel, forgings, castings, weldments, mechanical and electrical components plus tool and maintenance items. Supervised expediting, shipping, receiving and clerical. Additional 5 years experience in cost accounting with same firm.

Education: Two years business college. Will relocate.

Write: Box 283

Experience: Presently employed as buyer. Previous 4 years technician in Engineering laboratory, administration officer and interviewer for international organization. Office manager in army training center—some teaching. Intelligence service during W.W.II. Age 37.

Education; Liberal arts degree— Europe. 4 yrs. of college—U.S.A. plus public speaking; languages; journalism; Quality control; statistic course. Will relocate.

Write: Box 285

Experience: Successful achievement record in efficient purchasing of wide range of materials; heavy experience in business stationery; graphic arts and printing supplies; practical background in inventory controls; systems and procedures; strong management and organizational ability; thorough knowledge of principles and techniques of purchasing.

Education: BS (Bus. Adm) Seminars purchasing and inventory controls. Will relocate.

Write: Box 278

Experience: In the purchasing field 5 years. 3 years as P.A. for pipe fabricating firm. Responsible for material control, traffic, & expediting. Sub-contracting experience as well as regular purchases of industrial equipment, material handling equipment, fittings, flanges, special forgings, stampings, castings, & pipe.

Education: 3 years pre-law; 2 years law.

Will relocate. Write: Box 279

Experience: Seven years in purchasing and estimating for graphic arts. General p. a. for very large printing plant. 4 years as paper buyer earlier. Machinery, parts, ink, engraving, electros, MRO, binding. Experienced expeditor, inventory control, cost reduction programs, scheduling, traffic.

Education: B.S. in Econ., Wharton School. Specialized in domestic commerce, marketing, industrial management. Advanced evening course in purchasing.

Write: Box 284

Experience: Ten yrs. as purchasing dept. head in heavy industry: steel-electronics-castings-forgings-M.R.O. expediting. 18 yrs. asst. gen'l adjuster fire insurance co. 1½ yrs. public acct. 1½ yrs. inspection-aircraft.

Education: B.S.—Business Admin., 1½ yrs. graduate night school.

Will relocate.

Write: Box 275

HOW TO APPLY

Listings in this department are offered without charge. Both purchasing department personnel interested in changing jobs and employers in search of replacement or additions to their departments may take advantage of this service. When writing, specify whether you want the applicant's form or the employer's form. Address all correspondence - whether for forms, or in answer to an employment advertisement, to: Box No. Employment Service Department. Purchasing Magazine, 205 East 42nd Street, New York.

Experience: Eight years as asst. purchasing manager of raw materials in extremely large volume for domestic and overseas plants. Responsible for procurement, planning, policy, value analysis and administration. Three years as asst. regional branch manager—multi-plant Company. Age 29. Total eleven years management experience. Seeking greater management potential.

Education: BBA and MBA received during evenings; plus graduate research work in plant operations and industrial engineering; also attended advanced Army Ordnance Schools.

Will relocate. Write: Box 276

Experience: Seven years, responsible for purchasing activities for all components, raw materials, equipment, sub-contracting supplies, services and MRO supplies including accounts payable and cost coding. 2 years, liaison work between purchasing and accounting. 3 years, cost accounting. All major corporations.

Education: Four years college, 1 year business college Will relocate.
Write: Box 281

Experience: Two years purchasing for sheet metal manufacturer in one man office with yearly purchases over one million dollars. Also three years production control and inventory control. Two years drafting and design of production methods. Presently buying all materials used to maintain plant and production department.

Education: Four years college, major in engineering. Will relocate. West Coast preferred Write: Box 282

Experience: Five years expediting and assistant buyer for capital equipment, machine tools, expendable tools, construction contracts, material handling, coal, maintenance and repair orders, disposal surplus tools and equipment. Age 27.

Education: B.A. from eastern college. Will relocate in Michigan, Wisconsin or New England Write: Box 280

For More Information about ad on facing page
Write No. 380 on Place Mark Card—page 32—
PURCHASING



Teeth in ratchet head and socket openings are induction heated for hot forming without tears or ruptures. Over-heating of steel is avoided and decarburization is prevented. Unusual accuracy is attained and the grain structure of the metal remains unbroken.



Completely machined ratchet and socket blanks are heated and quenched in a series of salt baths to develop the proper relationship of toughness and hardness without decarburization or dimensional distortion.

A Push Button World at WILLIAMS

B-52 and 5-52 RATCHET FEATURES

I tooth give 82 tooth action requiring less than 4½° swing at hendle for complete

"SUPERRATCHET"

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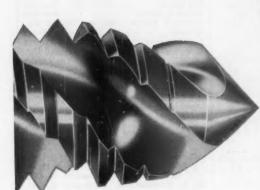
ZONE STATE

Advertisers In This Issue

^	Crown Zellerbach Corp 299	H-O-N Co., The 206
Air Reduction Sales Co.	Crucible Steel Company	Hubbell, Inc., Harvey,
& Subsidiaries 60	of America 262, 263	Machine Screw Dept 138
Alan Wood Steel Company (Steel Sales)	D	
Albertson & Company, Inc 255, 256		
Allegheny Ludium Steel Corp 231	De Laval Steam Turbine Co170, 171	Illinois Tool Works,
Allied Radio Corp. 294	Deluxe Metal Products Division, Royal Metal Manufacturing Company 213	Shakeproof Division, Sems Licenses 45
Allmetal Screw Products Co., Inc 25 Alloy Steel Products Co., Inc 218	Detrex Chemical Industries, Inc 57	International Paper Co., Packaging Division
Aluminum Company of	Detroit Stamping Company 134	Island Creek Coal Sales Company, The 20
America 144, 145, 253, 272, 273	Dixie Bearings, Inc	
Aluminum Ladder Co	Dow Corning Corporation	J
Corbin Cabinet Lock Div 297	Du Pont de Nemours & Co. (Inc.), E. I.	
merican Machine & Foundry	Elastomer Chemicals Department 184 "Freon" Products Division	Jeffrey Manufacturing Company 181 Jenkins Bros 4th Cover
Company Division 280	Polychemicals Department (Teflon) 12	Johns Manville Corp.,
American Steel & Wire	Textile Fibers Dept 274	Transite Pipe Div 202
Division of United States Steel 258, 259	Durkee-Atwood Co.,	Jones & Laughlin Steel Corporation Stainless and Steel Division 182, 183
American Telephone & Telegraph Co. 215 American Telephone & Telegraph Co.	Industrial Division 3	Wire Rope Division 228, 229
Business Equipment Sales Division 107		
mpco Metal Inc	E	w
Mill Products	Eastman Kodak Company 208	Α.
Mill Products	Eaton Mfg. Co., Reliance Division 301	Keystone Carbon Co 41
naconda Metal Hose 281	Eberhard Faber, Inc	
nsul Chemical Co 243	Emerson Electric of St. Louis 283	L
rcos Corp. 241 rmstrong Cork Company 293	Erie Bolt & Nut Company 288	Lomb Electric Company The 95
ssociated Spring Corp 199	Essex Wire Corp.,	Lamb Electric Company, The
tlantic India Rubber Wks., Inc 297	R-B-M "Controls" Div 278, 279 Eversharp Pen Co., A Div. of	Lancaster Glass Corp 16
	The Parker Pen Co 205	Leece-Neville Company, The 14
	Exide Industrial Div.,	Lee Co., H. D
В	The Electric Storage Battery Co 257	Lincoln Electric Co284, 28
		Link Belt Co62, 6
assick Co., The	F	Lubriplate Division,
ay State Abrasive Products Co.		Fiske Brothers Refining Co
117, 118, 119, 120	Farrell-Cheek Steel Co	Ludiow Papers, Inc
day State Tap & Die Co	Federal-Mogul Division	
say West Paper Co	Federal-Mogul-Bower Bearings, Inc. 113	M
Federal-Mogul Bower Bearings, Inc. 115	Felters Company	Marathon Division of
searings, Inc	Fiske Brothers Refining Co.,	American Can Co 14
of F.M. & C. Co 223	LUBRIPLATE DIV 282	Marsh Instrument Co. Div. of Colorado Oil & Gas Corp 4
ethlehem Steel Co	Forge & Fittings Division, H. K. Porter Company, Inc	McGill Manufacturing Co., Inc 14
Blaisdell Pencil Co	Fort Howard Paper Co 232	Milford Rivet & Machine Company 11
diss & Laughlin, Inc	Foster Company, L. B 46	Miller Company, Rolling Mill Division 18 Miller Electric Co
Sound Brook Oil-Less Bearing Co 26		Mirro Aluminum Company
lower Roller Bearings Division-		Mobil Oil Company140, 16
Federal-Mogul Bower Bearings, Inc. 111	G	Moore Business Forms
tuffalo Forge Company 152, 153 tundy Tubing Company 316	Garlock, Inc 167	& Machine Company 1
1	Gast Manufacturing Corporation 290 Gates-Rubber Company 18	Mueller Brass Company150, 15
	Gaylord Container Corporation	Murray Company, A. B 29
C	Division of Crown Zellerbach Corp. 250	
arborundum Co., The-	General Electric Company	N
Bonded Abrasives Div 128, 129	Apparatus Sales Division 34, 35, 36 Metallurgical Products Department 66	National Carbon Company
Central Paper Company 239	Wiring Device Dept 65	National Carbon Company— Division of Union Carbide Corp 18
entury Electric Company 1		National Machine Products Company 1
	Gering Plastics, Inc. Division of	National Vulcanized Fibre Co 24
Chase Brass & Copper Co., Inc. 158, 150 Chicago Lock Company, The	Studebaker-Packard Corp 202	
Chase Brass & Copper Co., Inc. 158, 159 Chicago Lock Company, The	Studebaker-Packard Corp. 202 Granite City Steel Company 54 Graphic Controls Corporation 29	Nicholson File Company 1
Chase Brass & Copper Co., Inc. 158, 159 Chicago Lock Company, The 291 Chicago Molded Products Corporation —Chicago Molding Div	Studebaker-Packard Corp	Northern Natural Gas Company
Chase Brass & Copper Co., Inc. 158, 159 Chicago Lock Company, The	Studebaker-Packard Corp. 202 Granite City Steel Company 54 Graphic Controls Corporation 29 Graybar Electric Co., Inc. 4 Grinnell Company, Inc. 277	Northern Natural Gas Company
Chase Brass & Copper Co., Inc. 158, 156 Chicago Lock Company, The 20 Chicago Molded Products Corporation —Chicago Molding Div. 226, 286 Chicago Rawhide Mfg. Co. 26 Chrysler Corp.—Amplex Division 132, 133 Cincinnati Milling Machine Co. 22	Studebaker-Packard Corp. 202 Granite City Steel Company 54 Graphic Controls Corporation 29 Graybar Electric Co., Inc. 4 Grinnell Company, Inc. 277	Northern Natural Gas Company
Chase Brass & Copper Co., Inc. 158, 159 Chicago Lock Company, The 291 Chicago Molded Products Corporation —Chicago Molding Div. 226, 289 Chicago Rawhide Mfg. Co. 20 Chrysler Corp.—Amplex Division 132, 131 Cincinnati Milling Machine Co. 220 Clauss Cutlery Company, The 230	Studebaker-Packard Corp.	Northern Natural Gas Company
Chase Brass & Copper Co., Inc. 158, 159 Chicago Lock Company, The 29 Chicago Molded Products Corporation —Chicago Molding Div. 226, 289 Chicago Rawhide Mfg. Co. 22 Chrysler Corp.—Amplex Division 132, 133 Cincinnati Milling. Machine Co. 22 Clauss Cutlery Company, The 23 Cleveland Container Co., The 19	Studebaker-Packard Corp.	Nicholson File Company
Chase Brass & Copper Co., Inc. 158, 159 Chicago Lock Company, The 20 Chicago Molded Products Corporation —Chicago Molding Div. 226, 289 Chicago Rawhide Mfg. Co. 22 Chrysler Corp.—Amplex Division 132, 133 Cincinnati Milling Machine Co. 22 Clauss Cutlery Company, The 23 Cleveland Container Co., The 199 Conover-Mast Purchasing Directory 294	Studebaker-Packard Corp. 202	Nicholson File Company 11 Northern Natural Gas Company 12 Northern Plastics Corporation 22 Nutting Truck & Caster Company 26 Ohio Brass Company,
Chase Brass & Copper Co., Inc. 158, 156 Chicago Lock Company, The 291 Chicago Molded Products Corporation —Chicago Molded Products Corporation —Chicago Molding Div. 226, 286 Chicago Rawhide Mfg. Co. 26 Chrysler Corp.—Amplex Division 132, 131 Cheveland Killing Machine Co. 22 Clauss Cutlery Company, The 23 Cleveland Container Co., The 191 Conver-Mast Purchasing Directory 294 Container Corporation of America 191 Continental Diamond Fibre Corporation	Studebaker-Packard Corp.	Ohio Brass Company, Valve Division
Chase Brass & Copper Co., Inc. 158, 156 Chicago Lock Company, The 20 Chicago Molded Products Corporation —Chicago Molding Div. 226, 286 Chrysler Corp.—Amplex Division 132, 133 Cincinnati Milling Machine Co. 22 Clauss Cutlery Company, The 23 Cleveland Container Co., The 194 Conover-Mast Purchasing Directory 29 Container Corporation of America 195 Continental Diamond Fibre Corporation A subsidiary of the Budd Company 26	Studebaker-Packard Corp. 202	Nicholson File Company 11 Northern Natural Gas Company 22 Northern Plastics Corporation 22 Nutting Truck & Caster Company 26 Ohio Brass Company, Valve Division 11 Okonite Company 11 Okonite Company 12 Olin Mathieson Chemical Corporation
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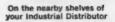
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Advertisers In This Issue

(Continued from page 312)

P
Packaging Corporation of America 51 Parker-Kalon Division, General Amer.
Perfection Gear Co.—American Stock
Philadelphia Gear Corp
Dioneer Rubber Company Industrial
Division 268, 269, 269 Polymer Corp. of Penn., The 196 Potter & Brumfield, Division of American Machine & Foundry Co. 135 Proto Tool Co. 302
Proto Tool Co 302
Q
Quinn-Berry Corp 39
R
Railway Express Agency, Inc
Railway Express Agency, Inc. 197 R-B-M Controls Div., Essex Wire Corp. 278, 279 Reliance Electric & Engineering Co. 165, 166
Reliance Electric & Engineering Co. 165, 166 Republic Rubber Div. 50 Republic Stele Corporation 246, 247 Revere Copper & Brass, Inc. 185 Reveroids Metals Company 28 Ridge Tool Company, The 244 Riverside Alloy Metal Division, H. K. 276 Porter Company 276 Roadway Express, Inc. 306 Roberts Co., C. A. 288 Roberts Rubber Co., Weldon 206 Rockwell Mfg. Co. Measurement & Control Div. 108, 108
Republic Steel Corporation246, 247
Revere Copper & Brass, Inc
Ridge Tool Company, The
Roadway Express, Inc
Roberts Co., C. A. 288 Roberts Rubber Co., Weldon 206
Rockwell Mfg. Co. Measurement & Control Div
Rome Cable Division of Alcoa178, 179
Control Div
Nut Company 58 Ryerson & Son, Inc., Joseph T. 68
St. Regis Paper Company, Gummed Products Div. 56 Sandvik Steel, Inc.—Spring Div. 291 Scovill Manufacturing Company 218, 220 Scl-Rex Corporation 298 Shell Oil Company 2nd Cover Sier-Bath Gear & Pump Co., Inc. 236 Simonds Abrasive Company 251 Skil Corporation 2
Products Div
Scovill Manufacturing Company219, 220 Sel-Rex Corporation
Shell Oil Company2nd Cover Sier-Bath Gear & Pump Co., Inc 236
Simonds Abrasive Company
Skil Corporation 25 Skinner Electric Valve Division, The Skinner Chuck Company 300 Solvay Process Division, Allied Chemical Corporation 31
Chemical Corporation
Southern Die Casting & Engineering 303 Spaulding Fibre Co. Inc. 37
Speedi-Dri Division, Minerals & Chemicals Philipp Corp. 290
Solvay Process Division, Allied Chemical Corporation 31 Somers Brass Co., The 124 Southern Die Casting & Engineering 303 Spaulding Fibre Co., Inc. 37 Speedi-Dri Division, Minerals & Chemicals Philipp Corp. 290 Square D Company 3rd Cover Stackpole Carbon Co., Electronic Components Division 163
Stackpole Carbon Co., Electronic 163 Components Division 195 Standard Oli Company 195 Standard Pressed Steel Company 122 Stearns Electric Corp. 288 Steiner Company 305 Sugar Beet Products Co. 222 Sun Shipbuilding & Dry Dock 200 Company 300
Standard Pressed Steel Company _162, 235 Stearns Electric Corp 288
Steiner Company 305 Sugar Beet Products Co. 222
Company 300
Company 300 Superior Steel Division, Copperweld 275 Superior Tube Co. 52
Taylor Chain Co., S. G
Taylor Chain Co., S. G. 186 Thompson-Bremer & Company Division of American Machine And Foundry Company 280 Thor Power Tool Co. 32
Foundry Company 280 Thor Power Tool Co. 32
Tinnerman Products, Inc. 30 Towmotor Corp. 289
Foundry Company 280 Thor Power Tool Co. 32 Tinnerman Products, Inc. 30 Towmotor Corp. 289 Truscon Laboratories 201 Tyler Company, W. S., The 131
U .
Uddeholm Company of America, Inc. 238
Uddeholm Company of America, Inc. 238 Union Wire Rope Company 242 U. S. Graphite Company 48, 49 U. S. Industrial Chemicals Co., Division of National Distillers & Chemical Corp. 271 United States Rubber Company 157
Division of National Distillers &
Chemical Corp. 271 United States Rubber Company 157 Universal Cyclops Steel Corporation 22
V
Vascoloy-Ramet Corporation 224 VISIrecord, Inc. 210 Very Machine Co. Happy
VISIrecord, Inc. 210 Vogt Machine Co., Henry 16

W		
Weirton Steel Company Wellington Sears Company Westinghouse Electric Corp122, 1 174, 175, 187, 188, 188, 184, 187, 188, 188, 188, 188, 188, 188, 188	225 33 43 164 23, 189 143 311 304 233 53	
Y		
Yale & Towne Mfg. Co	127 308	

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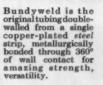
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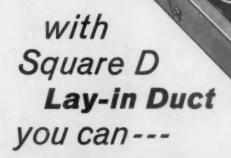
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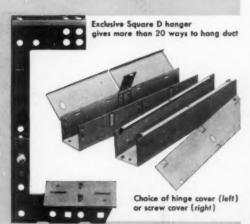
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